

Visualising Climate 2026

Book of Abstracts

Bologna, Italy · 4–6 November 2026

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About the conference

In an era of accelerating climate crisis, the role of clear, compelling, and actionable communication has never been more critical.

Visualising Climate is the first global conference on data visualisation for climate and environmental sciences. Bringing together scientists, artists, communicators, and journalists, this event will serve as a meeting point between data and storytelling, evidence and perception, art and science.

Over three days of talks, workshops, and informal conversations, participants will delve into how data can be visualised to inform, engage, inspire action, and influence policy. This summit is a space to share tools, techniques, and case studies that push the boundaries of visual narratives, foster interdisciplinary collaboration and co-creation, and empower change through data visualisation.

We believe no single discipline holds the whole answer. Science gives us the rigour, the models, and the evidence base without which visualisation is just decoration. Media gives us reach, narrative, and the instinct for what makes a story travel beyond the people who already care. Art gives us form, feeling, and the courage to represent what numbers alone cannot: loss, scale, urgency, hope. Visualising Climate is built around these three pillars — Science, Media, and Art — not as separate tracks but as a single conversation, because the most consequential climate visualisations of the past decade have rarely come from one discipline working alone.

The stakes for getting this right are rising. Climate data has never been more abundant, more granular, or more publicly accessible — and yet the gap between what we know and what we collectively act on keeps widening. Misinformation spreads faster than nuance. Complex, uncertain, planetary-scale phenomena resist easy charts. Visualising Climate exists because closing that gap is a design problem as much as a scientific one, and because the people best equipped to solve it are rarely in the same room: researchers who understand the data, journalists who understand the audience, and artists who understand how to make people feel what a dataset means.

Hosted in Bologna for its first edition, Visualising Climate is conceived as the beginning of an ongoing community rather than a single event. We want it to be the place where a satellite scientist compares notes with a data journalist, where a museum designer finds their next collaborator, and where practitioners test ideas that are still too new to have a name. Every talk, workshop, paper, and conversation gathered in this book is a contribution to that shared, evolving practice.

Visualising Climate is where the worlds of information and imagination collide to reshape how we see and respond to a changing climate and its impacts and risks for humanity and ecosystems. Come see the data and imagine new ways forward.

Visualising Climate 2026

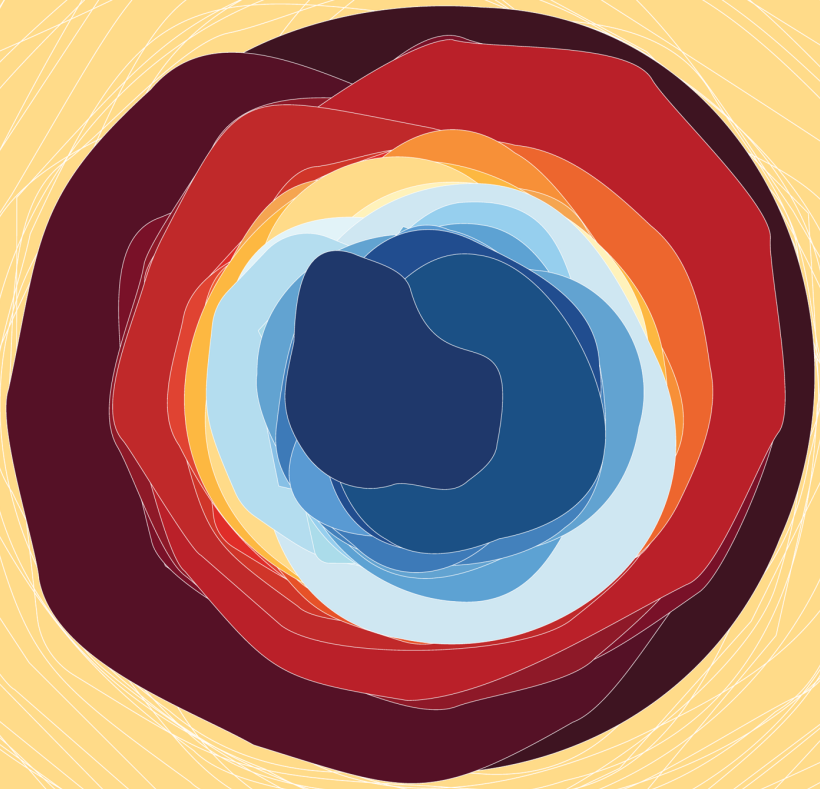
Bologna, Italy
4–6 November

SUMMIT

SCIENCE • MEDIA • ART

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the first global conference dedicated to climate data visualisation



About

Organizing Committee

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About

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Visualising Climate 2026 is organized and supported by the following institutions.



















For the full and most up-to-date list of participating institutions, visit visualisingclimate.com/institutions.

Keynotes

Keynote Speakers

1. **Hidden Legacy**
Angela Morelli

2. **Extreme Weather Journalism in an Extremely Online World**
John Keefe

3. **The Living Languages of Data Visualization: Giving Shape to Climate, Environment and Inequality**
Federica Fragapane

Keynotes

#1 Hidden Legacy



Author(s): Angela Morelli

SPEAKER BIOGRAPHIES

Angela Morelli

Angela Morelli is an award-winning Italian information designer based in Norway. She is the CEO and co-founder of InfoDesignLab. She has worked with a wide range of scientific organisations and professionals including the Intergovernmental Panel on Climate Change (IPCC), the European Environment Agency, the Norwegian Institute of Public Health, the Center for Climate Research in Norway, and the World Meteorological Organization.

Reflections at the intersection of climate science, data visualisation, and the journey of co-designing understanding

Drawing on a journey of over two decades at the intersection of information design and science, Angela will retrace how, in a world where scientific evidence is contested and scientists face growing pressures, co-design became a necessity: not simply as a way of involving an audience, but as a practice of building, together with scientists, a flexible scaffolding for listening, questioning, exploring and creating shared understanding. A final visualisation remains central. Yet what supports its strength is often less visible: the relationships, knowledge, skills and ways of working developed through the process. A legacy that can endure beyond individual projects, strengthening our collective capacity to communicate climate science, inform decisions, raise awareness and connect with people.

Keynotes

#2 Extreme Weather Journalism in an Extremely Online World



Author(s): John Keefe

SPEAKER BIOGRAPHIES

John Keefe

John Keefe is a journalist and data editor who leads the Weather Data team at The New York Times. He directs the analysis, modeling, and visualisation of weather and climate data used across news, graphics, and interactive reporting. His work sits at the intersection of journalism, science, and technology, helping translate complex environmental information into clear, accurate, and impactful stories for a global audience.

In an era of intense storms and weather-headline hype, an exploration into how — and why — a global news organization is serving audiences clear, considered information through localized data and innovative graphics.

Keynotes

#3 The Living Languages of Data Visualization: Giving Shape to Climate, Environment and Inequality



Author(s): Federica Fragapane

SPEAKER BIOGRAPHIES

Federica Fragapane

Federica Fragapane is an independent information designer who has created data visualisation projects for the United Nations, the World Health Organization, the Publications Office of the European Union, the BBC, Scientific American, Google, Triennale Milano, and La Lettura of Corriere della Sera. In 2023, three of her data visualisations became part of the permanent collection of the Museum of Modern Art in New York.

The talk follows the design process and reasoning behind a selection of projects developed across different contexts and media, addressing climate and the environment, as well as inequality. I will reflect on how data visualisation languages grow from the characteristics of the data, the stories they can tell and the people they are designed for.

Round Table

A Seat at the Table: Information Designers Inside Scientific Institutions

Panelists: Claire Ransom (WMO), Dr Anna Lombardi (ECMWF/ Copernicus), WOO Qiyun (IPCC), Dr Freya Muir (ESA)

Chair: Tom Gabriel Johansen (InfoDesignLab)

Introduction: Anna Pirani (CMCC)

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Major scientific institutions have begun employing information designers and data visualisation experts, laying a foundation for a more professional field. Practitioners from WMO, ECMWF/ Copernicus, IPCC and ESA discuss what this shift looks and feels like today: new recognition and opportunities, alongside vulnerability, pressure and the growing impact of AI. Having earned a seat at the table, how does the profession keep developing, and where is it going?

Talks

Art

1. **Climate Trunk: Around Climate and Energy in 100 Infographics**
John Lang

2. **Linocut Visualizations: Functional Art for Climate Action**
Elsie Lee-Robbins

3. **Interfacing Climate Complexity through Supercomputing and Speculative Design**
Sophie Falkeis

4. **Climate Through Conversation - Co-Creating Climate Visualisations through Generative Art and Natural Language**
Arturo Montieri

5. **What the Fire Takes: Visualising Cultural Heritage Loss in the Age of Wildfire**
Rifaa Tajani

6. **Data Drums: provoking climate action with data-inspired body percussion**
Rahul Bhargava

Media

7. **The Atlas of Global Development: how to measure progress and communicate global trends**
Maarten Lambrechts

8. **How ProPublica Visualized Carbon Capture's Risks**
Lucas Waldron, Katie Worth

9. **Data: This time it’s personal**
Niko Kommenda, Daniel Wolfe

10. **Importing or creating? Climate Visualisation in the Global South**
Samira Hamza

11. **Pacific Dataviz Challenge: Engaging Pacific Youth on Climate Change Through Data Visualisation**
Léo Cann-Polydor, Pacific Dataviz Challenge 2026 Winner

12. **Carbon Brief: Visuals to inform and influence**
Tom Prater

13. **The power of satellite imagery: Visualising EO data**
Athanasia Nikolaou, Chiara Luisa Ferrario

14. **Beyond explanation: Making arguments with climate data visualization**
Youyou Zhou

15. **Beyond the Wow: A UX Lens on Climate Visualization**
Elena Drakulevska

16. **A Cartography in 25 Movements. Visualising a Century of Spatial and Climate Data on the Winter Olympics**
Marco Ferrari

17. **From Data to Life Expectancy: Narrative Visualization for Air Pollution Decision-Making in AQLI**
Xaquín Veira, Claudia Gemmel

18. **From Data Exploration to Climate Visualization Across Time and Space**
Frédérik Ruys

19. **Unseen Heat: telling the story of a crisis that hasn't happened yet**
Daniel Staal

Science

20. **Using data visualisations as a co-creation tool to chart climate-resilient pathways with farmers in Kenya**
Edward Sparkes

21. **Data as Images: Climate Visualizations as Cultural Constructions in the Age of Disinformation**
Javier Cantón-Correa

22. **Designing for understanding: An evaluation of co-design and cognitive principles on comprehension of Intergovernmental Panel on Climate Change (IPCC) data visuals**
Jordan Harold

23. **Visualising 85 Years of Global Climate: Designing Interactive Web Applications for ERA5 Reanalysis Data**
Matthew Menary

24. **Beyond Communication: The Role of Visual Arts in Climate Adaptation Research and Practice**
María Loroño

25. **Experiencing Climate Data: Immersive Visualisation for Destination Earth**
Andreas Mueller

26. **Design: The Catalyst for Climate Action**
Alexander Safchuk

27. **Co-designing Impact Webs with Art Narratives to visualize Complex Disaster Risk with Refugees in the Humanitarian Camp Complex Dadaab**
Samira Pfeiffer, Greta Dekker

28. **Visualising Climate Change for the public: Insights from MeteoSwiss**
Mauro Hermann

29. **Fragile Frontlines: An Atlas of Loss & Damage in the Third Pole**
Madeeha Merchant

30. **Adaptive Translation: bridging the user-expert gap in climate data visualisation for institutional uptake**
Giorgia Ghergo

31. **Community Advocacy Through Mapping: Co-producing Geospatial Knowledge throughout the Arctic**
Greg Fiske, Christina Shintani

32. **What to expect when designing with climate experts**
Francis Gagnon

33. A design system built for fast decision-making: Lessons from C3S Climate hazard screening and exploring tool

Isadora Jiménez

34. From Climate Data to Visual Narratives: Scientific Visualisation with Blender at the BSC Earth Sciences Department

Oriol Tintó, Lorena Gallardo, Rosa Rodríguez

Talks · Art

#1 Climate Trunk: Around Climate and Energy in 100 Infographics

Author(s): John Lang

SPEAKER BIOGRAPHIES

John Lang

John Lang is a climate analyst at the Energy & Climate Intelligence Unit and co-founder and lead of the Net Zero Tracker. He founded Kiwis in Climate, a global network of New Zealanders working on climate issues. His latest project is The Climate Trunk, a visual guide to climate and energy.

Misinformation is reshaping climate politics, with net zero increasingly weaponised through selective data, false comparisons and strategic doubt, reinforcing the need for rigorous, accessible science communication.

Climate change is a communication challenge, where an ecosystem of deflection arguments has flourished: 'But what about China?' 'We're less than 1% of emissions.' 'The climate has always changed.' 'Can't we just adapt?' These claims are rarely attempts to inform; they're rhetorical devices that delay action.

This talk presents Climate Trunk, a visual system of eight rings designed to confront these narratives directly. Built as a structured 'forest' of 100+ interconnected infographics, the project will provide a coherent, system-level view of climate science, impacts, energy and solutions, while explicitly addressing common forms of 'whataboutery'.

Misinformation flourishes not because of a lack of data, but a lack of context and coherence. Facts are fragmented, structure is missing, and audiences are vulnerable to misleading comparisons and false equivalences. Visuals directly address this. When designed well, they anchor memory far better than words alone.

Through examples, this talk shows how carefully constructed visuals can reframe familiar deflections – placing national emissions in global context, distinguishing cumulative from annual responsibility, and clarifying the limits of adaptation. Each infographic is designed to be legible at a glance, credible under scrutiny, and resilient to misuse.

At a time of growing net zero backlash, the challenge is not just to communicate climate change, but to disarm the arguments that prevent action. This talk explores how visual thinking can help do that.

Talks · Art

#2 Linocut Visualizations: Functional Art for Climate Action

Author(s): Elsie Lee-Robbins

SPEAKER BIOGRAPHIES

Elsie Lee-Robbins

Elsie Lee-Robbins is a data visualization designer with a PhD from the University of Michigan, where she researched how designers define what they want audiences to learn, feel, or do. She crafts data-driven stories, spanning digital and physical mediums, and is a data visualization specialist at the Postal Regulatory Commission.

Data visualizations are commonly used to inform people about climate data. This talk explores the intersection of functional art and data visualization, where the goal shifts from informing an audience to encouraging action and climate conversations. I crafted linocut postcards that feature a data visualization about energy demand. Linocutting, a printmaking technique, gives the postcard a handmade and tactile quality. The form of the postcard becomes a piece of functional art that can be sent to a friend or a policymaker. The postcards feature a visualization about how US data centers are projected to double their energy consumption by 2030. US data centers are currently the subject of policy debates over how to regulate their development and energy use. Communities can send these postcards to contact representatives about their concerns and support for climate policies. The data visualization linocut postcards combine an element of art, a logical appeal of data, and an inherent function of communication. Together, they make it easier for constituents to turn their support for sustainability into climate action. In this talk, I show the process of the visualization design and linocutting, discuss the challenges of the project, and reflect on data visualization goals to inspire action.

Talks · Art

#3 Interfacing Climate Complexity through Supercomputing and Speculative Design

Author(s): Sophie Falkeis

SPEAKER BIOGRAPHIES

Sophie Falkeis

Sophie Falkeis is a Vienna- and Zurich-based designer exploring socio-ecological and geopolitical complexities of climate change through Speculative Design. Her work has been exhibited internationally, is part of the MAK permanent collection, and was featured in The NewYork Times. Alongside her independent practice, she is also Co-PI of ECHOES, WSL.

In a world shaped by multiple intersecting crises, we need new hybrid formats for imagining possible futures. This requires not only new narratives, but also new ways of working with and making sense of vast, abstract datasets.

This talk presents an interdisciplinary, practice-based methodology that dovetails Speculative Design and climate science to reframe complex questions and explore possible climate futures.

Echoes is a two-year research and communication project funded by the Swiss National Science Foundation, investigating the cascading impacts of extreme weather events in the Alps. Focusing on megadroughts in the “water towers of Europe,” it traces repercussions across ecological, geopolitical, and socio-economic systems. Building on First Encounters (2021) and Turning the Ecological Gears (2022), Echoes advances an interdisciplinary approach that pairs design with science through joint scenario generation.

Combining high-performance climate modeling and eco-hydrological simulations with Speculative Design and worldbuilding, the project produces visual narratives of ecological entanglement in a more-than-human world. Following four rivers from their alpine sources to the sea, these narratives map how impacts propagate across space and time, revealing interdependencies within hydrological systems and foregrounding the politics of water in Europe’s future.

The project unfolds as an immersive exhibition and four-channel video installation. Using cascading effects and river meanders as a narrative structure, Echoes highlights the multiplicity of futures, emphasizing that they are neither singular nor predetermined. Across these spatial and sensory formats, data is transformed into embodied experience, enabling climate futures to be sensed, discussed, and critically engaged beyond purely analytical modes of understanding.

Talks · Art

#4 Climate Through Conversation - Co-Creating Climate Visualisations through Generative Art and Natural Language

Author(s): Arturo Montieri

SPEAKER BIOGRAPHIES

Arturo Montieri

Arturo Montieri is CTO at Alia Space Systems, working at the intersection of Earth Observation, climate data visualisation, and AI. His work explores conversational interfaces, agentic AI, and generative art to bridge science, technology, and creativity through interactive data storytelling.

Climate visualisation is often presented as something to observe, interpret, or decode — typically as static outputs shaped by expert tools and established visual conventions. But what if climate visualisation could also be something we actively co-create?

This talk explores an alternative approach in which natural language becomes an interface for generating and transforming climate visualisations through conversation. Combining distributed climate data sources, conversational AI, and generative art systems, the project enables people to collaboratively create interactive visual interpretations of climate data without requiring programming expertise. Scientific datasets such as temperature anomalies, atmospheric indicators, and climate projections are retrieved through distributed climate data tools and translated into generative visual systems built with creative coding technologies.

Through natural language interaction, users can prompt visualisations, iteratively transform them, and explore alternative representations in a mixed process of dialogue, interpretation, and creative experimentation.

A temperature anomaly might become a moving particle field. Warming stripes might evolve into a living generative system. Sea-level projections might be explored as speculative visual futures.

Rather than treating climate visualisation as a fixed act of representation, this approach frames it as a dynamic and participatory process where scientific data, visual form, and human imagination interact.

Through live demonstrations, the talk explores how generative art and natural language interfaces can expand climate communication beyond static explanation toward more exploratory, expressive, and collaborative forms of climate storytelling. It proposes climate through conversation as a new space between scientific rigour, creative experimentation, and public engagement.

Talks · Art

#5 What the Fire Takes: Visualising Cultural Heritage Loss in the Age of Wildfire

Author(s): Rifaa Tajani, Eli Su

SPEAKER BIOGRAPHIES

Rifaa Tajani

Rifaa Tajani is a Master in Design Engineering candidate at Harvard University, researching how design and technology intersect with the systems that shape people's lives at scale. Her work focuses on designing sociotechnical systems that help institutions act under complexity—across climate, conflict, AI, and cultural heritage—by making invisible dynamics legible and actionable.

As climate disasters intensify, visualisation plays a critical role in shaping what societies recognise as vulnerable, valuable, and worth protecting. Yet disaster maps often privilege physical and economic loss — acres burned, properties damaged, recovery costs, and infrastructure disrupted — while overlooking the cultural heritage sites through which communities hold memory, identity, spirituality, and belonging.

What the Fire Takes is a data visualisation and geospatial analysis project that examines this missing layer through wildfire risk in California. Anchored in the January 2025 Palisades and Eaton fires, which together destroyed more than 16,000 structures, the project uses open-source cultural heritage data and California's Fire Hazard Severity Zones to map where places of worship, museums, historic sites, and other community anchors are at risk.

Combining spatial analysis with narrative storytelling, the visualisation argues, through design, that wildfire must be understood not only as a natural disaster but as a slow erasure of cultural infrastructure.

This talk will share the design process behind the project, including the challenges of working with incomplete heritage inventories, translating geospatial analysis into public-facing visual narratives, and designing for both emotional resonance and decision-making.

Rather than treating cultural heritage as secondary to climate resilience, the project positions heritage as part of the social infrastructure of adaptation. By making cultural risk legible before disaster strikes, What the Fire Takes offers a case study in how climate visualisation can move from reactive documentation of loss toward proactive, plural, and community-centred resilience planning.

Talks · Art

#6 Data Drums: provoking climate action with data-inspired body percussion

Author(s): Rahul Bhargava

SPEAKER BIOGRAPHIES

Rahul Bhargava

Rahul Bhargava is an educator, designer, and artist who creates participatory data experiences with communities. His first book, "Community Data: Creative Approaches to Empowering People with Information", is available from Oxford University Press. Rahul is an Associate Professor of Journalism and Art + Design at Northeastern University.

Climate change has become hard to talk about, creating a major barrier to collective action even amongst scientists and nature lovers. This has driven our explorations into media for bringing people together around climate-related data via designing arts-based data experiences that might break through this hesitation.

This experimental talk invites the audience to perform CO2 emissions through body percussion: clapping, stomping, tapping legs, and more. We want to explore how embodiment and sonification can help us feel the data, not just see it.

We will build on embodied data representation research and encodings developed for Data Drums, a live Brazilian percussion performance that won a 2026 Data Sonification Award. Through the distinct rhythmic traditions of Brazil, India, and the US we will explore and perform national, per-capita, and sectoral emission levels. The idea of international cooperation across countries will be introduced through syncopation and dissonance.

Through these playful encodings we aim to build a shared re-understanding of why bringing people together around climate data requires not just better visualizations, but better experiences. We aim to build the evidence base about how and why arts-based approaches to sharing climate data can re-invite in those that have checked out from action.

Talks · Media

#7 The Atlas of Global Development: how to measure progress and communicate global trends

Author(s): Maarten Lambrechts

SPEAKER BIOGRAPHIES

Maarten Lambrechts

Maarten Lambrechts is a Data Visualization Consultant at the World Bank's Development Data Group. He is the main developer of the Atlas of Global Development, combining web development, data science, visualization, and cartography. Before joining the World Bank, he worked as an independent data journalist and data designer.

Since the 1960s, the World Bank's Atlas series has reported on trends in global development data compiled by the Bank. The 2026 edition, the online-only and interactive Atlas of Global Development, demonstrates how complex methodologies and a plethora of datasets can be transformed into an engaging publication for a broad audience. Topics of the Atlas include extreme poverty, urban development and artificial intelligence, while the chapter on climate change focusses on exposure, vulnerability and adaptation to climate hazards.

Central to the Atlas is the concept of progress. Measuring progress sounds straightforward, but traditional approaches often disadvantage poorer countries. To address this, the Atlas of Global Development 2026 introduces a new framework for measuring progress that accounts for where countries start off from rather than simply measuring distance to a target or relative change over time. This approach, however, is far more complex and less intuitive to explain.

In this talk, Maarten will show how the Atlas uses scrollytelling, interactivity, and data visualization to communicate this new framework to different audiences in a clear and engaging way.

The Atlas also offers broader lessons about building highly data-driven digital publications. With 95 data visualizations at its core, the project required close collaboration between writers, designers, data scientists and developers. Maarten will discuss what it means to place data visualization at the center of both the user experience and the editorial process, as well as the logistical challenges of integrating a large number of interactive visualizations into a publication on a corporate website.

Talks · Media

#8 How ProPublica Visualized Carbon Capture's Risks

Author(s): Lucas Waldron, Katie Worth

SPEAKER BIOGRAPHIES

Lucas Waldron

Lucas is a graphics editor at ProPublica, a U.S.-based nonprofit newsroom focused on investigative reporting in the public interest.

Over the last year, journalists at ProPublica have dug deeply into data on Carbon Capture and Sequestration (CCS) – a technology that must work at a massive scale for the world to avoid catastrophic climate change. Their investigation has uncovered a sobering reality — CCS is all but impossible to deploy at the scale the world would need.

The findings of this investigation are shocking — 6 billion tons of carbon must be buried each year by 2050; to achieve that, 60,000 miles of new pipeline would be needed in the U.S. alone; the world would need to open a new geological waste site every 4 days for 25 years.

All of these stats are interesting if you know about climate data, but the average reader may not understand them or have a way to conceptualize them.

To make this investigation more accessible, the team decided to tackle the storytelling of these findings in a visual way, enlisting an animator and designers to create scenes that capture staggering scale and explain complicated processes.

This talk will cover how the visual elements of the project were conceptualized and how we tackled challenges with visualizing the data in a way that would be accessible to the lay reader without sacrificing nuance and rigorous accuracy.

Talks · Media

#9 Data: This time it's personal

Author(s): Niko Kommenda, Daniel Wolfe

SPEAKER BIOGRAPHIES

Niko Kommenda

Niko Kommenda has worked as a graphics journalist in major UK and US newsrooms for around 10 years, most recently as climate graphics reporter at the Washington Post. He co-anchored the Post's Climate Lab column, answering everyday questions around climate and the natural world with visuals and data.

Daniel Wolfe

Daniel Wolfe is a journalist using interactive graphics and novel data analysis to report on our changing environment and its impacts on public health. Previously he co-anchored a column at The Washington Post, The Climate Lab. He is a Pulitzer Center, Metcalf, and an NYU Stern Climate Economics Journalism Fellow.

Daniel Wolfe and Niko Kommenda, the former authors of the Washington Post's data-driven Climate Lab column, discuss how interactive visualizations and personalized tools in particular help readers engage with scientific data. The talk is aimed not only at other data and visual journalists but at researchers keen to extend their media reach.

Throughout our time working on the Washington Post's climate desk, we've often found that scientists produce vast amounts of unique data but are unsure how to go about sharing it with the wider public beyond a press release and perhaps some basic charts. We'll draw on our experiences and learnings to discuss the following questions:

* How do you personalize data with visualizations?

* What do we think our readers want from climate visuals? What worked, what didn't?

* What makes a piece of scientific research appealing or suitable for data visualization?

* Where might science communication be headed as scientists and journalists become increasingly data- and visually literate?

Talks · Media

#10 Importing or creating? Climate Visualisation in the Global South

Author(s): Samira Hamza

SPEAKER BIOGRAPHIES

Samira Hamza

Samira Hamza is an Egyptian science journalist and visual researcher with over a decade in journalism, documentary, TV, and digital media. She works at the intersection of visual storytelling, audience psychology, and science communication, exploring how audiences perceive complex information. A former Knight Science Journalism Fellow at MIT, she examines science communication in the Global South.

Climate visualisation is often shaped by narratives and aesthetics produced in the Global North: data-heavy graphics, distant environmental imagery, and recurring symbols such as melting ice caps or polar bears. While these visual languages may resonate with audiences in wealthier nations, they often fail to connect with audiences in the Global South, despite these regions being among the most vulnerable to climate change.

Drawing from audience psychology, visual storytelling, and case studies from my region — as someone who belongs to both Africa and the Arab World— the Arab world and other parts of the Global South, this talk explores how imported climate narratives can create emotional and cultural distance between audiences and the crisis itself. In many developing countries, climate change competes with ongoing political and economic instability, while high levels of visual and textual illiteracy can make complex visualisations inaccessible for large segments of the public.

The session examines how localized climate storytelling — through culturally relevant imagery, familiar references, and everyday experiences — can create stronger emotional connection and public engagement. It also explores how repetitive disaster imagery contributes to visual fatigue, particularly among younger audiences who increasingly consume media as emotional escape rather than confrontation.

Rather than simply criticizing existing climate communication, the talk argues for creating locally grounded visual narratives that make climate stories feel immediate, understandable, and personally relevant to audiences in the Global South.

Talks · Media

#11 Pacific Dataviz Challenge: Engaging Pacific Youth on Climate Change Through Data Visualisation

Author(s): Léo Cann-Polydor, Pacific Dataviz Challenge 2026 Winner

SPEAKER BIOGRAPHIES

Léo Cann-Polydor

Leo Cann-Polydor is an award-winning data visualisation practitioner and the coordinator of the Pacific Dataviz Challenge. Passionate about using data to communicate complex issues such as climate change, he works across the Pacific to help students, educators and decision-makers turn data into compelling stories that drive understanding and action.

Pacific Dataviz Challenge 2026 Winner

Representing the next generation of Pacific data storytellers, the 2026 Pacific Dataviz Challenge winner will share his award-winning visualisation on climate change. It offers a powerful Pacific perspective on one of the region's most pressing challenges and demonstrates how dataviz can inform, engage and inspire action.

The Pacific Dataviz Challenge is a Pacific-led regional initiative with international reach, designed to engage young people—who represent over 50% of participants—in exploring climate change through data visualisation. Drawing participants from 27 different countries, the Challenge places Pacific data and perspectives at its core while rewarding outstanding entries with international prizes.

Built on open and official datasets from Pacific Island countries, the Challenge focuses on climate-related issues such as sea-level rise, climate hazards, environmental vulnerability, and adaptation. Participants work with data reflecting their own island realities, enabling them to tell situated stories about climate change in one of the regions most exposed to rising sea levels.

In 2026, climate change is the central theme of the competition, alongside a major expansion: the introduction of a dedicated schools track. The Challenge is now integrated into the national curricula of more than five Pacific countries, a number that continues to grow. This track is delivered in close collaboration with teachers and supported by classroom-ready resources, including workshops and video materials.

This talk presents the Pacific Dataviz Challenge as a media-driven case study, showing how visualisation translates climate science into accessible narratives for youth audiences. The initiative also promotes STEM disciplines, with strong participation from girls (60% of youth participants), and demonstrates how data visualisation brings together science, climate data, and visual expression.

As part of the first prize, the Challenge offers an entry to Visualising Climate 2026 to amplify Pacific Youth voices globally.

Talks · Media

#12 Carbon Brief: Visuals to inform and influence

Author(s): Tom Prater

SPEAKER BIOGRAPHIES

Tom Prater

Tom Prater is the Visuals Editor at Carbon Brief, where he leads the team behind the publication's graphics, charts, maps, videos and interactive features. His work focuses on communicating complex climate science and policy through clear, engaging and impactful visual storytelling.

Carbon Brief is a specialist online publication covering the latest developments in climate science, energy and policy. Our journalism combines rapid-response analysis that counters misleading media and political narratives with in-depth explanatory reporting designed to support researchers, policymakers and the wider public in understanding the nuance and complexity of climate change.

At Carbon Brief, data visualisation and explainer graphics are central to the reporting process. This might mean building and maintaining in-house databases over many years, developing recurring analytical frameworks and refining scientific charts that can guide readers through technically complex subjects.

Carbon Brief is not dependent on advertising revenue, and not driven by traffic incentives or commercial subscriptions alone. This means we are able to invest in longer-form visual journalism that prioritises clarity, evidence and longevity. Our interactives and data projects are designed to remain useful references long after publication, whether explaining attribution science, tracking media narratives around climate policy or unpacking emerging scientific risks.

In this talk, the Carbon Brief visuals team will share the editorial and design strategy behind our approach to online climate communication. Through examples spanning climate science and climate policy — including maps, video, charts and interactive storytelling — we will discuss how we balance complexity with immediacy and the challenges posed when communicating to different audiences.

Talks · Media

#13 The power of satellite imagery: Visualising EO data

Author(s): Athanasia Nikolaou, Chiara Luisa Ferrario, Michael Booth, Emmanouil Lagoudakis, Michele Martino

SPEAKER BIOGRAPHIES

Athanasia Nikolaou

Nasia is a Greek physicist with research background in climate science and planetary physics. She has worked in various EU countries and has been awarded an ESA champion distinction for bringing complex space topics to the public. She currently works in earth observation data mining and their visualisation.

Chiara Luisa Ferrario

Originally trained as an architect and later as a spatial engineer, Chiara Ferrario specializes in Earth Observation data visualization at ESA. Her work brings together science, design, and communication to create visual narratives that reveal the beauty, complexity, and vulnerability of our changing planet.

The European Space Agency (ESA) offers unique access to connect with high level policy makers, the scientific community, industry, and the general public. This variety calls for out-of-the-box, often unexpected ways of presenting the value of Earth Observation (EO). While each target audience requires a custom approach, our aim remains the same: communicate science in a clear, accurate and attractive way.

Satellite data are indispensable to the validation of climate simulations but to that end they are usually reprojected and lose their original level of spatial and temporal detail. Before being digested into long time series they are available in raw format with a great potential to document natural events in fine structure.

With a wealth of medium to high resolution EO data at their disposal, ESA's outreach efforts are also tasked with following the major natural events registered by satellites and make them rapidly available to the public in an appealing yet comprehensive way.

From covering natural disasters to visualizing Essential Climate Variable (ECV) trends, the beauty and fragility of our environment is brought into focus in the choice of visuals. Presented correctly, they can invoke an appreciation of the environment as an essential resource.

Join us for a behind-the-scenes look at how ESA's Phi-Visuals team deals with a myriad of requests that change by the day. From creating brand new ways to visualise data from pioneering Earth Explorer missions to immersive multi-media experiences showcased at the Phi Experience, no two assignments remain the same.

Talks · Media

#14 Beyond explanation: Making arguments with climate data visualization

Author(s): Youyou Zhou

SPEAKER BIOGRAPHIES

Youyou Zhou

Youyou Zhou is a data and visual journalist based in New York. Her work renders ideas in graphic forms. She writes an occasional column at The Washington Post Opinion desk on topics including immigration, AI, and shifting identities. She also teaches, speaks and mentors others on data storytelling and visualization.

This talk draws a distinction between data visualization for explanation and data visualization for persuasion. The latter, I'll argue, is what practitioners need to master to distinguish themselves and create an impact. This is especially important in climate and environmental visualizations, where there is almost always a call for action.

Analysts are great at identifying climate trends and phenomena. Designers are great at finding creative ways to make scientific information accessible. But oftentimes we stop there and do not think about the message. Even in the world of visual journalism, many stories are published with great presentation but little convincing power.

I hadn't given this much thought for more than a decade of working as a data journalist in various capacities until I started working at the Opinion section of The Washington Post. Now I ask myself and my editors constantly: how do you make an argument with data visualization? What does a good dataviz column look like?

I'll share several techniques I learned from my job making arguments with data and visuals at The Post's Opinion desk and how they apply to climate stories specifically. I hope the audience will walk away from the talk with a new perspective on data visualization and some readily applicable methods for mastering persuasion with it.

Talks · Media

#15 Beyond the Wow: A UX Lens on Climate Visualization

Author(s): Elena Drakulevska

SPEAKER BIOGRAPHIES

Elena Drakulevska

Principal Product Manager at Microsoft working on Power BI Core Visuals, where I help shape the future of reporting and data visualization. I'm an international speaker, Microsoft MVP alumna, and founder of MoonStory, a platform focused on UX Design and Data Viz. Through conferences, mentoring, and community initiatives, I share my mission of making technology more human, empowering and joyful

Climate data visualisation has produced some of the most striking and visually compelling work of our time. But capturing attention is only part of communicating effectively. How well do these visuals support understanding, comparison, and decision-making?

Through the lens of user experience and visual communication, we'll examine how color, contrast, typography, and context can help or hinder people's ability to read and interpret climate data.

This session invites designers, scientists, journalists, and communicators to ask an uncomfortable question: are we designing to impress each other, or to help people understand?

Talks · Media

#16 A Cartography in 25 Movements. Visualising a Century of Spatial and Climate Data on the Winter Olympics

Author(s): Marco Ferrari, Elisa Pasqual, Silvia Cannella, Matteo Bettini

SPEAKER BIOGRAPHIES

Marco Ferrari

Co-founder of Studio Folder, an interdisciplinary agency for visual design and spatial research working both on commissions in culture and the arts and on independent research projects. He is co-author of "A Moving Border: Alpine Cartographies of Climate Change," and head of MA Information Design at Design Academy Eindhoven.

A Cartography in 25 Movements is a data-visualisation film interpreting a century of spatial, historical, and climate data about the Winter Olympic Games through a figure skating choreography. The project draws on datasets spanning all 25 editions of the Games (1924–2026), encoding environmental and statistical variables on venues and national participations, and the growing reliance on artificial snow-making and climate-control technologies.

Behind the apparently harmonious performance of skating, the visualisation reveals how the Games have steadily expanded their geographical and environmental footprint—extending the spatial scale and altitude range where events take place, and following the accelerating patterns of climate change by depending on engineered environments.

The talk will present the research and design behind the work: from the collection and analysis of data to the development of a visual language that bridges cartographic notation, choreographic scores, and data visualisation. It will discuss how the collaboration with two figure skaters allowed the datasets to be embodied and performed rather than merely visualised—turning the ice rink into a surface for inscription, and the body into an instrument of representation.

Developed as a commission for an exhibition, the project proposes a critique of the aesthetics of visualisation and the politics of mega-events in the age of the climate crisis. By interpreting data through the medium of performance, the work embraces the indeterminacy, imprecision, and ambiguity inherent in climate data itself—an embodied visualisation that, through the unpredictability of a choreography, attunes to the uncertainty of the phenomena it represents.

Talks · Media

#17 From Data to Life Expectancy: Narrative Visualization for Air Pollution Decision-Making in AQLI

Author(s): Xaquín Veira, Claudia Gemmel, Tanushree Ganguly, Vicki Ekstrom High, Karma Peiró-Rubio, Aleix Alvarez-Calafell, Laia Verdaguer-Puigdollers, Denisse Carvajal-Bruce, Judit Quintana-Massana, Pol Darder-Martin

SPEAKER BIOGRAPHIES

Xaquín Veira González

Xaquín G.V. is a Galician visual journalist, educator, and co-founder of the Visualization for Transparency Foundation. Formerly an editor at The New York Times and National Geographic, he led The Guardian's Visuals team. He currently advises The Straits Times and teaches Data Science at the University of Girona.

Claudia Gemmel

Claudia Gemmel is a Communications Specialist at the University of Chicago's Institute for Climate and Sustainable Growth. Previously at the OECD in Paris, she is an expert in institutional communication, advocacy, outreach, and media strategy. She speaks five languages and holds degrees in politics, European Union law, and communication.

Many climate data platforms emphasize exploration, but enabling public and policy action across diverse national contexts requires visualization systems that guide interpretation. This talk presents a case study of narrative visualization for decision-oriented understanding of air pollution impacts through the August 2025 redesign of the Air Quality Life Index (AQLI).

Developed by the Energy Policy Institute at the University of Chicago (EPIC), AQLI translates air pollution exposure into impacts on life expectancy across countries. First launched in 2018, the 2025 relaunch emerged from an iterative co-design process between EPIC and the Visualization for Transparency Foundation (ViT), combining user research, design workshops, and evaluation cycles.

The redesign addressed limitations of the previous platform, which relied on open-ended exploration and lacked country-level views. Evaluations revealed choice paralysis and difficulty deriving policy-relevant insights, motivating a shift toward structured storytelling and guided interpretation.

A central element of the redesigned system is adaptive country pages composed of modular narrative blocks. Using scrollytelling, visual sequences present exposure levels alongside regulatory benchmarks, projected lifespan gains under alternative policy scenarios, and comparative risk relative to other health threats. These representations support policy evaluation and resource prioritization by framing epidemiological indicators as decision-relevant evidence and have contributed to public debate in high-pollution regions.

The platform incorporates data provenance and versioned updates to enhance transparency. A central design challenge was balancing scientific precision with communicative immediacy: simplified lifespan metrics increase engagement but may obscure model assumptions. Our study derives design guidelines for narrative climate platforms to support evidence-based decision-making.

Talks · Media

#18 From Data Exploration to Climate Visualization Across Time and Space

Author(s): Frédérik Ruys

SPEAKER BIOGRAPHIES

Frédérik Ruys

Passionate data visualization specialist at the Royal Netherlands Meteorological Institute (KNMI), helps transform complex information into clear, accessible visual stories. Working within the communications department, he bridges data, science, and technology to communicate insights through short animations. Driven by curiosity and a love of learning.

Climate data, in all its dimensions, is too often reduced to static maps or single-layer charts: simplicity mistaken for clarity. In this talk, I share visual explorations that enrich datasets by combining atmospheric variables, satellite imagery, and geographical processes into short, unfolding narratives. Rather than simplifying, the aim is to embrace complexity. In doing so we can help bridge the gap between scientific insight and public understanding.

While animation introduces the dimension of time, guiding the viewer through change and scale, techniques like Gaussian splatting open up the dimension of space, allowing data to be explored from different angles and perspectives. Together, they can reveal relationships that remain hidden in static views, while keeping uncertainty and data limitations visible.

Rather than a strict scientific analysis, this talk is a collection of visual experiments and workflows—an iterative, hands-on approach to discovering new ways of exploring and communicating climate data.

Talks · Media

#19 Unseen Heat: telling the story of a crisis that hasn't happened yet

Author(s): Daniel Staal, Jan-Willem Anker, Sophie van der Horst, Timo Kelder, Lisette Klok

SPEAKER BIOGRAPHIES

Daniel Staal

Daniel is a creative technologist at Climate Adaptation Services in Amsterdam, working at the intersection of climate data, visualization, and interactive design. He develops digital tools and visual stories that make complex climate information more accessible, engaging, and useful.

How can we make climate risks imaginable before they become disasters? Unseen Heat is an online climate story, available at unseenheat.com, that explores what could happen if a city were hit by an unprecedented heat crisis: several days above 40°C, tropical nights, pressure on emergency healthcare, disruptions to daily life, and cascading effects such as power outages and the closure of public facilities.

The story follows a fictional young family during one night and one day of extreme heat. Through recognisable situations, sound design and dynamic graphs, Unseen Heat translates scientific insights into a concrete narrative experience.

The original version was developed for Eindhoven, the Netherlands; elements of the approach were later adapted for Regensburg, Germany, showing how local context can be used to make climate risk feel specific rather than generic. Developed by Climate Adaptation Services we worked with as an interdisciplinary team including a climate scientist, designer, storytellers and communication specialists.

In this talk, we will reflect on how this collaboration shaped the story: why we chose a fictional family rather than an institutional scenario, how we balanced scientific credibility with emotional engagement, and how data visualisation, sound and story were integrated to create a compelling and relatable story.

By presenting Unseen Heat, we want to show how interdisciplinary climate storytelling can help adaptation professionals move from abstract risk awareness to preparedness conversations about extremes they may not yet have experienced, but increasingly need to plan for.

Talks · Science

#20 Using data visualisations as a co-creation tool to chart climate-resilient pathways with farmers in Kenya

Author(s): Edward Sparkes, Chani Wisdom, Joseph Matata, Grace Ngumbi, Solomon Mbivya, Raffaele Vignola, Saskia Werners

SPEAKER BIOGRAPHIES

Edward Sparkes

Edward's research covers complex systems analysis, climate risks and adaptation pathways. He is passionate about co-creation and interdisciplinary collaboration. His work focusses predominantly on working with communities to understand and manage complex impacts from climate change. He is currently perusing his PhD on pathways for complex climate change risk management.

Climate risks are increasingly recognised as complex, shaped by interacting social, ecological, and climatic dynamics. Yet, many approaches to climate risk assessment and adaptation planning remain hazard-centric, limiting their ability to characterise how interacting dynamics create impacts, and how these are navigated in practice. At the same time, data visualisations are typically treated as outputs of analysis rather than as tools that shape knowledge co-production.

In this talk, we present an approach where data visualisations were used to co-create risk and adaptation knowledge for climate-resilient development pathways. Working with 180 smallholder farmers in Makueni County, Kenya, we conducted focus group discussions to understand how climate change creates challenges, map aspirations for the future, and explore how farmers want to move from challenges towards aspirations.

We then developed data visualisations that characterise how hazards interact with drivers of vulnerability to create cascading impacts across farmers' lives and livelihoods. We then visualised adaptation and development responses identified by farmers, showing how these can support transitions towards future aspirations.

Returning visualisations to participants, we facilitated co-design sessions to refine system dynamics, sequence adaptation options, and identify where vulnerabilities and opportunities co-evolve to shape pathways.

This work shows data visualisations can function not only as communication outputs, but as tools for co-creating actionable knowledge for climate-resilient development pathways. By making dynamics such as feedbacks and leverage points for interventions legible to researchers and farmers, visualisations supported the identification of locally relevant and preferred actions, and revealed how interconnected risks shape adaptation decisions and pathways.

Talks · Science

#21 Data as Images: Climate Visualizations as Cultural Constructions in the Age of Disinformation

Author(s): Javier Cantón-Correa

SPEAKER BIOGRAPHIES

Javier Cantón-Correa

PhD in Social Sciences and MSc in Artificial Intelligence, teaches dataviz at Universidad Internacional de La Rioja (UNIR), Universitat Oberta de Catalunya and Universidad Isabel I. A former fact-checker at RTVE and a research associate at IBERIFIER, he researches disinformation and visual culture, and leads MonitorIA, an artificial intelligence tool that detects disinformation on Telegram.

Data visualizations have become central instruments for communicating climate change, shaping public understanding, policy debates, and collective action. Yet their apparent neutrality—grounded in numbers, scales, and scientific aesthetics—also makes them powerful vectors of disinformation.

This talk argues that climate visualizations are not transparent representations of reality but cultural constructions that encode interpretive choices, reflect power relations, and operate through visual rhetoric.

Building on a new framework, the presentation integrates insights from visual culture studies, the epistemological critique of data as capta, Barthesian semiotics, and cognitive research on perception. It proposes a five-level analytical model—political, epistemological, semiotic, perceptual, and typological—to explain a central paradox: the more a visualization conforms to conventions of scientific credibility, the more effectively it can be weaponized in disinformation contexts.

The argument is illustrated through climate-related case studies, including axis manipulation in climate denial charts and the rhetorical framing of temperature trends. These examples show that misleading visualizations rarely rely on technical errors; instead, they exploit structurally "well-designed" charts whose authority masks interpretive bias. Empirical evidence from the MonitorIA project, which tracks disinformation in Telegram ecosystems, further demonstrates how such "vulnerable visualizations" circulate and gain traction in contemporary media environments.

The talk concludes by outlining an ethics of critical visualization and proposing a shift from conventional visualization literacy toward a broader notion of data citizenship. Understanding climate visualizations as cultural artifacts is essential not only for detecting disinformation, but for designing more responsible and reflexive forms of visual communication in the climate domain.

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#22 Designing for understanding: An evaluation of co-design and cognitive principles on comprehension of Intergovernmental Panel on Climate Change (IPCC) data visuals

Author(s): Jordan Harold, Irene Lorenzoni, Kenny Coventry, Clara Kübler, Eve Norris, Danni Walters

SPEAKER BIOGRAPHIES

Jordan Harold

Jordan Harold is an applied cognitive psychologist at the University of East Anglia and the Tyndall Centre for Climate Change Research, UK. His research investigates how individuals interpret data visuals and he has provided expertise to a number of IPCC and UNEP reports.

Intergovernmental Panel on Climate Change (IPCC) reports provide policy-relevant assessments of climate change science to inform policymakers and diverse global audiences. However, figures – i.e. data visuals – from past reports have been criticised for being difficult to understand for many audiences. Therefore, for the IPCC's Sixth Assessment many of the figures for the Summaries for Policymakers were developed through co-design involving climate experts, information designers, cognitive and social scientists, and policymakers. The design process considered the Message, Audience, Design and Evaluation (MADE principle).

In this talk we present insights from our research that assess the cognitive design principles applied during the co-design process and evaluate to what extent comprehension of the figures improved as a result.

For 12 IPCC figures we take early drafts (prior to co-design) and their final published versions (post co-design). In an online study, participants view six early draft figures and six co-designed figures, but never receive a matching pre and post co-design pair. Participants complete comprehension questions for each figure, along with measures of graph reading ability, climate knowledge and climate beliefs as control variables. Through additional data collection, participants' preferences for pre and post co-designed figures are evaluated.

Findings will (a) inform understanding of the influence of co-design and the application of cognitive principles to making IPCC figures more accessible for non-expert audiences, and (b) identify which comprehension challenges remain to be addressed, to help inform the design of figures for the next cycle of IPCC Assessment Reports.

Keywords: IPCC, comprehension, co-design

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#23 Visualising 85 Years of Global Climate: Designing Interactive Web Applications for ERA5 Reanalysis Data

Author(s): Matthew Menary, Chiara Cagnazzo, James Varndell

SPEAKER BIOGRAPHIES

Matthew Menary
Scientific web application design and development at ECMWF. I have a background in climate science, big data, and native app development for iOS. Previously I worked at Sorbonne Université and as a senior scientist at the Met Office Hadley Centre.

The ERA5 reanalysis, produced by ECMWF for the Copernicus Climate Change Service, provides hourly global climate data from 1940 to near real time: an extraordinarily rich and complex dataset.

We present three interactive web applications - ERA Explorer, Thermal Trace, and Weather Replay - developed as part of the Horizon Europe ASPECT project to make this data visually engaging and accessible to journalists, educators, policymakers, and the public. Each application addresses a distinct use case while sharing core design principles: mobile-first responsive layouts, interactive global maps, location-based time series charts, and gamified onboarding that guides users from simple exploration to deeper analysis.

ERA Explorer enables comparison of climatological averages across the globe, featuring warming stripes and threshold analysis. Thermal Trace visualises decades of heat and cold stress through the Universal Thermal Climate Index (UTCI), supporting public health monitoring. Weather Replay streams hourly atmospheric fields with animated map sequences and multi-level variable exploration, to reconstruct historical weather events.

A key technical challenge was delivering responsive interactivity over a multi-terabyte archive. We adopted an Analysis-Ready Cloud-Optimised (ARCO) approach using Zarr storage, enabling on-the-fly computation from 80+ years of hourly data within seconds. Weather Replay takes this further with a front-end-only architecture, offloading rendering and animation to the user's device, achieving near-infinite scalability without backend computation. Spatial and temporal subsampling strategies balance performance with scientific fidelity across all three applications.

We discuss the visualisation design decisions, technical trade-offs, and lessons learned in translating reanalysis data into intuitive visual experiences.

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#24 Beyond Communication: The Role of Visual Arts in Climate Adaptation Research and Practice

Author(s): María Loroño, Marta Olazabal, William Lewis, Ana Terra Amorim-Maia, Cecilia Alda, Sean Goodwin

SPEAKER BIOGRAPHIES

Maria Loroño-Leturiondo

Maria is a Postdoctoral Researcher at BC3. Her research focuses on designing environmentally and socially sustainable cities, participation, and creative research methodologies. She has a background in communication and cognition, and a PhD in Public Engagement with Climate Change. She is the author of Data Visualisation in Qualitative Research (SAGE).

Climate adaptation presents an opportunity to reimagine futures, extending beyond dominant narratives of green utopias, doomsday scenarios, and technology-dominated futures. However, envisioning alternative futures remains a significant challenge, particularly when relying on text-based forms of communication alone.

This talk argues for the role of visualisation, specifically illustration, as a methodological and epistemic tool in climate adaptation research. Visual artefacts can stimulate imagination, evoke emotional engagement, and enable the articulation of tacit and experiential knowledge that is often inaccessible through conventional analytical approaches. In contexts marked by uncertainty, loss, and complex socio-environmental change, such capacities are essential.

The presentation showcases a curated set of 31 illustrations developed through a process of co-production, bridging art and science. The illustrations explore diverse interpretations of adaptation, for the particular case of cities, interrogating what adaptation is and is not, while opening space for plural and situated futures.

The talk further demonstrates how visuals can support collaborative visioning at the city scale and contribute to dismantling knowledge hierarchies by fostering inclusive dialogue among diverse stakeholders. Empirical insights are drawn from a global study on adaptation imaginaries, complemented by place-based engagements in Mérida (Mexico), Bogotá (Colombia), and Alghero (Italy).

Together, these insights illustrate how visual methods can function as both analytical and participatory tools, expanding the scope of data visualisation to include affective, imaginative, and co-created dimensions of knowledge production. This contribution positions illustration not merely as a representational device, but as a transformative practice for engaging with the complexities of climate adaptation in urban contexts.

Talks · Science

#25 Experiencing Climate Data: Immersive Visualisation for Destination Earth

Author(s): Andreas Mueller

SPEAKER BIOGRAPHIES

Andreas Mueller

I am a scientist at ECMWF, creating engaging, immersive visualisations for Destination Earth. My background spans numerical weather prediction model development, from numerical methods to performance optimisation, and scientific visualisation, including visualising large-eddy simulations in collaboration with the US Navy's computer graphics team.

As climate simulations continue to increase in scale and complexity, new approaches are needed to communicate Earth system data beyond traditional scientific audiences. Immersive visualisation techniques offer opportunities not only for exploration and explanation, but also for creating experiences that strengthen emotional and perceptual engagement with climate and weather data.

This talk presents immersive visualisations developed for the European Commission's Destination Earth initiative, with a particular focus on the Climate Change Adaptation Digital Twin developed by ECMWF and its European partners. Based on high-resolution Earth system simulations, these visualisations transform atmosphere and ocean processes into interactive spatial experiences that can be explored in real time.

Using advanced rendering and interactive visualisation techniques, the presented work focuses on how large-scale Earth system data can be experienced intuitively and visually. Atmospheric dynamics, ocean circulation, global cloud structures, extreme weather events, and long-term climate patterns are visualised in ways that emphasise both scientific richness and visual accessibility.

The talk discusses approaches for combining scientific data with immersive presentation technologies to support communication with diverse audiences including policymakers, communicators, journalists, and the general public. Particular attention is given to the role of visual fidelity, spatial immersion, and interactivity in shaping audience perception and engagement.

By moving beyond static representations toward immersive experiences, these visualisations explore new possibilities for connecting people emotionally and intuitively with the complexity, beauty, and scale of the Earth system.

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#26 Design: The Catalyst for Climate Action

Author(s): Alexander Safchuk

SPEAKER BIOGRAPHIES

Alexander Safchuk

Alex spent a decade leading Experience Design at Huge Inc for clients like Google, Brooks, and Epic Games. Joining Ode in 2023 as an Experience Design Partner, he now applies his commercial expertise to build digital products and tell captivating stories, driving positive impact for both people and the planet.

Environmental data has never been more abundant. Satellites track methane plumes in real time. Ocean sensors follow whales across thousands of miles. Coastal models price climate risk down to the parcel level. The science is extraordinary, yet most of it sits on hard drives and in research papers.

When tackling our biggest climate challenges, the problem isn't the data—it's what to do with it.

Design is the vital translation layer between raw science and human action. From foundational user experience to final interaction details, design determines whether data stays buried or becomes an engine for policy, investment, and conservation. Drawing on three projects—Carbon Mapper's methane emissions portal, the Blue Corridors whale migration tracker, and ORRAA's Coastal Risk Index protecting over $363 billion in assets—we'll show how intentional design throughout the digital build turns passive information into real-world change.

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#27 Co-designing Impact Webs with Art Narratives to visualize Complex Disaster Risk with Refugees in the Humanitarian Camp Complex Dadaab

Author(s): Samira Pfeiffer, Greta Dekker

SPEAKER BIOGRAPHIES

Samira Pfeiffer

Researcher at United Nations University and PhD candidate at Wageningen University. Her interdisciplinary work focuses on complex risks, climate adaptation, and resilient development. She specializes in co-producing actionable risk knowledge, participatory methods, adaptation pathways, impact-based early warning, and risk-informed action across the Greater Horn of Africa, India, SADC, and Europe.

Greta Dekker

Researcher at United Nations University and PhD candidate at Wageningen University. She focuses on conceptual risk modelling, climate adaptation pathways, and private-sector engagement in resilience. She researches climate risk perception, public-private partnerships, and transdisciplinary adaptation strategies, with expertise in visualizing science and translating research into actionable insight

Despite scientific evidence of increasingly frequent and severe weather and climate extremes, we still lack effective tools to communicate their adverse impacts. In refugee camps, these impacts are deeply interconnected, shaped by displacement and fragile infrastructure, and amplified by multi-risks such as floods, drought, and heat. Yet data often obscures refugees' lived experiences and reduces them to statistics, making it hard to visualize everyday realities and to communicate the urgency for disaster risk reduction.

This talk addresses two gaps: the need to connect complex disaster risk assessments with narratives that center refugees' experiences, capacities, and agency; and the need to make research outputs actionable for communities facing structural barriers.

We present a visual approach developed in the Dadaab refugee camp complex in Kenya, one of the world's largest humanitarian refugee settings. Through a participatory process involving more than 80 refugees, humanitarian actors, and host-community members, we co-produced an impact web, which is a conceptual risk model that captures the interconnected and dynamic nature of complex disaster risks.

We then translated the impact into a series of visual art narratives. These illustrations communicate the complexity of risk through the realities of everyday life in the camp, bringing individual experiences, their stories, and perspectives to the foreground. We discuss how this combination of conceptual models and artistic storytelling can support capacity building, training development, and broader science communication, while keeping the experiences and agency of affected communities at the center.

This talk shares: (1) a transferable approach to visualizing complex risks for multiple stakeholders; (2) a case example weaving empirical evidence with art to strengthen engagement; and (3) practical insights on how visual tools can support learning, dialogue, and local action. Ultimately, it explains how to make climate risk visible, relatable, and actionable in complex humanitarian contexts.

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#28 Visualising Climate Change for the public: Insights from MeteoSwiss

Author(s): Mauro Hermann, Simon C. Scherrer, Rebekka Posselt, Cornelia Schwierz

SPEAKER BIOGRAPHIES

Mauro Hermann

Climatologist at MeteoSwiss, holding a PhD in atmospheric and climate sciences. He provides government agencies, the media, stakeholders, and the public with information and advice on climate and weather. Previously, as a media meteorologist at Swiss Radio and Television, he gained experience in weather forecasting and media communication.

Climate Communication is an important mandate of national weather and climate services. At MeteoSwiss, we reach a wide spectrum of audiences through different channels: from the general public and policy makers to federal, cantonal and local authorities, decision makers and more science-educated partners such as impact researchers. Visualisations play a key role in all contexts and are an excellent way to illustrate complex scientific topics in a digestible and actionable manner.

Given our wide range of users, our visualizations range from infographic-type plots and animations with a high creative ambition to more standardized graphical representations in the context of climate monitoring and climate projections. To this end it is also relevant to implement the visualisations in an operational production chain that allows to provide this information in a timely, reliable and reproducible manner.

The presentation aims to provide an overview of our activities and approaches and to comment on the experiences and learnings that we gathered over many years. These include: infographics and their use and impact examples for and the role of animations and video content storytelling with personas to make complex information tangible for users examples from the climate monitoring suite and their applications lessons from interdisciplinary projects and co-design

We hope this talk sparks an exchange about the possibilities and challenges of visual climate communication in an operational setting in weather and climate services and that we might learn from designers and communicators working beyond the boundaries of science.

Talks · Science

#29 Fragile Frontlines: An Atlas of Loss & Damage in the Third Pole

Author(s): Madeeha Merchant, Iza Khan, Andrew Kruczkiewicz

SPEAKER BIOGRAPHIES

Madeeha Yasin Merchant

Madeeha Merchant is an architect and systems engineer based in New York City. She co-founded DOT \| Design of Territories, an architecture studio in New York and Paris, and serves as Executive Director of the Urban Justice League, a research think tank at the intersection of data, ethics, and justice.

The Hindu Kush Himalaya is a cryosphere in crisis. Its glaciers, atmospheric rivers, and thawing permafrost are the living infrastructure Asia depends on underwriting the lives of two billion people, including the frontline communities whose futures are the first to disappear.

Fragile Frontlines is a forensic atlas of this unfolding loss. It investigates the cascading climate catastrophes; glacial retreat, flash floods, landslides, disrupted precipitation, and collapsing mountain ecologies and assembles the evidence base that Loss and Damage policy requires but rarely receives: spatial, longitudinal, and grounded in community witness. It constructs a baseline model of fragility, vulnerability, and risk in real time, before the moment of irreversibility arrives; a live instrument for a policy framework still learning what evidence looks like.

The methodology is multidimensional. Satellite imagery, remote sensing, and deep learning are integrated with GIS-based cartography and in-situ field data. But the evidentiary structure does not stop at the scientific record. Local and traditional knowledge are not supplementary, they are constitutive. The visualizations hold both the satellite archive and the lived account, the glaciological model and the community witness.

Launched at UNESCO, Fragile Frontlines was developed by an interdisciplinary team spanning architecture, climate science, glaciology, anthropology, and policy. As the Fund for Responding to Loss and Damage operationalizes, the atlas positions visual evidence as an instrument of climate advocacy — legible to science, policy, and the communities it serves. This talk presents the project's methodology and asks what it means to design visualization as a tool for anticipatory justice.

Talks · Science

#30 Adaptive Translation: bridging the user-expert gap in climate data visualisation for institutional uptake

Author(s): Giorgia Ghergo, Manuela D'Amen, Antonella Tornato, Stefano Mariani, Nico Bonora, Cristina Ananasso, Andrea Taramelli

SPEAKER BIOGRAPHIES

Giorgia Ghergo

Post-doc researcher at IUSS Pavia, with a PhD in Sustainable Development and Climate Change and a degree in Communication Design. She works at the intersection of space data, design, and outreach, with ten years across thirty-plus projects for institutions worldwide. Her research examines how information design shapes the uptake of Earth observation data within the Copernicus Programme

As EO services, like the Copernicus Climate Change Service (C3S) and Atmosphere Monitoring Service (CAMS) expand, the bottleneck for climate action is no longer data scarcity, but the ability to "translate" this data into actionable information. While climate visualisations are key interfaces for making this information understandable, their uptake by institutional actors remains uneven.

This talk presents results of an empirical study identifying a persistent user-expert gap between those producing climate visualisations and national institutions responsible for climate governance. Using the Italian initiative for the C3S National Collaboration Programme as setting, we have defined and adopted a sequential mixed-method design that combined qualitative interviews with ECMWF experts, with a comparative survey of institutional users in Italy and ECMWF experts.

Our findings reveal a fundamental mismatch in priorities while experts prioritise scientific transparency, exploration, and uncertainty communication, institutional users often face "information overload". In fact, users mainly require workflow-ready outputs and struggle to integrate complex interactive tools into formal reporting and legislative procedures.

To help bridge this gap, we introduce the concept of Adaptive Translation that reframes visualisation as a negotiated practice at the science-policy interface. To this end, we propose eight design principles, including progressive disclosure, defensibility-oriented design, and workflow alignment, to ensure that scientific integrity is preserved while meeting the operational needs of policy- and decision-makers.

By shifting from "broadcasting information" to "supporting institutional workflows", our work provides actionable insights for designers and scientists on developing climate visualisations that empower sustainable governance, moving beyond mere data display.

Talks · Science

#31 Community Advocacy Through Mapping: Co-producing Geospatial Knowledge throughout the Arctic

Author(s): Greg Fiske, Christina Shintani

SPEAKER BIOGRAPHIES

Greg Fiske

Greg Fiske is the Director of Geospatial Technology at Woodwell Climate Research Center. A geographer and cartographer with over two decades of experience, he specializes in GIS, remote sensing, and data visualization. Fiske bridges art and science, creating impactful maps to communicate complex climate data, particularly regarding Arctic ecosystems.

Christina Shintani

Christina Shintani is an award-winning cartographer at Woodwell Climate Research Center, transforming complex climate data into powerful visual stories that drive action. Previously a Graphics Editor at National Geographic magazine, her work is featured in National Geographic, Rolling Stone, Atlas of Design, and scientific journals.

As the Arctic warms at four times the global average, Indigenous communities face the dual pressures of permafrost thaw and encroaching industrial development. This presentation explores how Woodwell Climate Research Center's Permafrost Pathways project utilizes the co-production of maps —a synthesis of Indigenous Knowledge and Western geospatial science—to transform GIS from a top-down surveillance tool into a bottom-up mechanism for land-use advocacy.

Through case studies spanning the Arctic, we will demonstrate our approach to geospatial training workshops. We partner with the International Centre for Reindeer Husbandry (ICR), a Reindeer Herding and Resilience project where Sámi reindeer herders use GIS to visualize how infrastructure fragments migration corridors. In Alaska, participants use GIS and drone imagery to document extreme weather impacts and brief policymakers on adaptation needs.

Our Alaska based GIS training workshops are centered around "map share-outs," where Indigenous partners lead the narrative of their own data. Attendees learn how building geospatial fluency empowers local stewards to visualize climate impacts, document cultural boundaries, and defend their lifeways.

Beyond training events, we cultivate lasting partnerships to provide map and storytelling support. The authors will detail a co-produced map with a Sámi reindeer herding family that visualizes how climate change and industry fragment land and reindeer herders' migrating activity. By blending climate science with Indigenous knowledge and rights, the map translates complex forces into an accessible narrative for general audiences. Ultimately, this collaborative model serves as a blueprint for equitable climate adaptation and cultural resilience across the global permafrost zone.

Talks · Science

#32 What to expect when designing with climate experts

Author(s): Francis Gagnon

SPEAKER BIOGRAPHIES

Francis Gagnon

Francis Gagnon is the founder of Voilà: (2013), an information design agency based in Montreal specializing in sustainable development. He leads the work of the firm, delivers training and talks on information design and data visualization. He holds a master's degree in international development from the London School of Economics and a master's degree in political science from Université Laval.

Experienced designers often struggle more with the client relationship than with the craft itself. Working with climate experts is its own kind of challenge.

Here are a few examples:

They are cursed (by expertise) - Climate is a complicated science combining physics, finance and politics to name just a few. Experts may not realize this complexity after years of swimming in it. How to help them make themselves understood?

They don't know (what they don't know) - Sometimes, the experts didn't even ask us for a visual, but we suggested it based on our reading of the material and their objectives, and they bought it.

They are not experts (in data visualization) - Most experts have made an attempt at visualising their charts when they come to an information designer. How to approach this? Is it useful or a hindrance?

They have no money (to waste) - Where is the money for good information design in the climate sphere? There is less than one might expect, given the urgency of the issue. How to make it work nevertheless?

As the founder of Voilà:, an information design agency focused on ESG since 2013, Francis Gagnon has had to structure design processes, to manage client collaboration and to design climate charts.

The general arc of the talk is that each side needs to do their job in full and trust the other side. This talk gives them something to bring home and change in how they work.

Talks · Science

#33 A design system built for fast decision-making: Lessons from C3S Climate hazard screening and exploring tool

Author(s): Isadora Jiménez, Nuria Sierra, Pau Moreno, Allison Shaylor, Sascha Hofmann, Jesús Peña-Izquierdo, Laia Romero, Sam Leader, Francis Colledge, Steven Wade, Michelle Spillar, Benjamin Smith, Roman Roehrl, Chiara Cagnazzo

SPEAKER BIOGRAPHIES

Isadora Jiménez

For the last decade, she has specialised in visual communication of climate information and co-designing user-tailored services to support decision-making, from early warning to climate change adaptation. She is co-chair of the SERA Working Group of the World Weather Research Programme, exploring the transition from research to operations through a social science lens.

Co-design is a core component of how climate information becomes actionable. The C3S Climate Hazard Screening and Exploration Tool is a climate service for the financial sector. The tool will enable users to screen multiple climate hazards across project locations and identify where a robust climate change signal flags the need for climate adaptation planning or further climate risk assessment.

The design challenge was translating rigorous and complex climate science –including model uncertainty– into a format that supports decision-making in fast-paced professional environments where time and cognitive bandwidth are limited.

Through an iterative co-design process with end users, we demonstrate how UX and information design support clarity without oversimplifying scientific nuances.

Key design principles results include:

1. progressive discovery, allowing users to access only the minimum information required for rapid decisions while enabling deeper exploration when needed;

2. clear information hierarchy that enhances information scannability through layout, size, typography, and colour;

3. intentional iconographic choices for the flagging system, recognising that symbols such as warnings, flags, or prohibition marks can carry different meanings across professional communities;

4. curated semantics of colour, given the strong cultural associations attached to colours such as red, orange, and yellow in signalling urgency, risk, or caution.

The work shows that effective climate service design requires more than scientifically robust data visualisation. It also requires meaningful stakeholder engagement, testing, and simplification of visual encoding to enable confident and fast decision-making while preserving access to the underlying scientific depth and complexity.

Talks · Science

#34 From Climate Data to Visual Narratives: Scientific Visualisation with Blender at the BSC Earth Sciences Department

Author(s): Oriol Tintó, Lorena Gallardo, Rosa Rodríguez

SPEAKER BIOGRAPHIES

Oriol Tintó Prims

Oriol holds a Ph.D. in Informatics with postdoctoral experience in Germany. He specializes in High Performance Computing applied to Earth Science models and scientific visualization. He is an AI4S grant recipient and works in the High Performance 4 Earth group at the Barcelona Supercomputing Center.

Lorena Gallardo

Lorena holds a Bachelor's in Chemistry, a Master's in Theoretical Chemistry, and is studying a Bachelor in Philosophy. She previously conducted research developing software for macromolecular X-ray crystallography at CSIC. Currently, she works as a Visualization Developer in the Computational Earth Sciences group at the Barcelona Supercomputing Center.

Rosa Rodríguez

Rosa is the Scientific Communications Officer in Earth Sciences at BSC-CNS, with extensive experience in public outreach, education, translation, and communication research. She holds a Ph.D. in Astrophysics, bring over a decade of research experience, and teaches physics at the Open University of Catalonia.

Scientific visualisation is becoming an essential bridge between complex Earth system data and the general public, stakeholders, and decision-makers who need to understand and act upon it. This talk will present a portfolio of climate and environmental visualisations developed with Blender at the Earth Sciences Department of the Barcelona Supercomputing Center – Centro Nacional de Supercomputación (BSC-CNS). The presentation will show how high-resolution simulations, projections, and environmental datasets can be transformed into scientifically grounded visual narratives without losing rigour or traceability.

Examples will range from visualisations produced in the framework of the European Commission's Destination Earth initiative—particularly its Climate Change Adaptation Digital Twin—where visualisation can help explore climate information in intuitive ways, such as comparing extreme events in the past, in the present, and under warmer future conditions, to air-quality visualisations developed within UrbanAIR, a European project working towards an urban air-quality digital twin for Barcelona and other cities.

The talk will also include additional examples related to climate change, atmospheric pollution, climate-sensitive infectious diseases, and the monitoring and quantification of greenhouse gas emissions.

In addition, the talk will show how 3D scientific visualisation can be extended beyond static outputs to support interactive, public-facing formats that make complex climate information easier for non-specialist audiences to engage with.

By sharing methods, examples, and lessons learned, the presentation will reflect on how Blender-based workflows can make climate data more accessible, meaningful, and actionable across scientific, institutional, and societal contexts.

Papers

1. **Who is Steering the Tandem? A Conceptual Framework for Co-Designing Climate Visualizations**
Francesca Morini

2. **Climate Physicalization: Bridging Tangible Interaction and Data Visualization for Environmental Communication**
Milena Vuckovic, Marlene Huber

3. **Exploring 3D Glyph Physicalizations for Public Engagement through River Health**
Maria Teresa Ortoleva

4. **2D/3D visualization for ensemble forecasting of coastal submersion**
Julius Bañgate, Jacques Gautier

5. **Diegetic Data Stories for Climate Communication**
Zezhong Wang

6. **From Data to Action: Applying Psychological Theories to Climate Visualisation Design**
Eva Mayr, Margit Pohl

7. **Not just maps: how school atlases shape understanding of climate**
Vít Voženílek, Radim Tolasz

8. **Insight Placement and Imagery in Climate Data Visualizations: Effects on Visual Attention and Perceived Climate Threat**
Dinko Bačić

9. **Visualisation as Cognitive Infrastructure: Narrative Cartography and the Co-construction of Climate Risk Knowledge in the MIRACLE Project**
Folco Soffietti

Papers

#1 Who is Steering the Tandem? A Conceptual Framework for Co-Designing Climate Visualizations

Author(s): Francesca Morini

SPEAKER BIOGRAPHIES

Francesca Morini

Francesca is Guest Professor for Information Visualisation and Management at the University of Applied Sciences Potsdam. PhD in Media and Communication Studies. She is affiliated to the UCLAB, a research group situated in between the humanities, design and computer science.

Preprint: zenodo.org/records/23418102

Data visualization is a powerful method to illustrate the current state as well as future visions of climate change. However, the combination of advanced scientific topics and data makes the design process of creating these visualizations particularly challenging for both domain experts (e.g., climate scientists) and designers. The former might struggle finding the appropriate tone and communication register when building visualizations. The latter might fail in translating difficult scientific concepts and data into appropriate visuals. The ideal solution to this problem is collaboration, but interdisciplinary work across these two domains can prove difficult, due to methodological differences. In this paper I put forward a collaboration model to help information designers co-creating climate visualizations with domain experts. The approach builds on Müller's concept of ``Tandem", where only one visualization designer and one domain expert closely collaborate in the core design phase of a climate visualization project. This concept is useful, because it highlights the importance of maintaining structured co-design practices, but also limited, because it does not have sufficient theoretical and empirical evidence of its usefulness and applicability. In this position paper, I will take the first step towards enriching the Tandem model. Drawing on previous HCI and visualization research, I argue that Tandems hold potential to address three issues related to climate visualization projects, namely ownership, simplification, and creative lock-ins.

Papers

#2 Climate Physicalization: Bridging Tangible Interaction and Data Visualization for Environmental Communication

Author(s): Milena Vuckovic, Marlene Huber, Fabrizia Bando-Bechtold, Daniel Cornel, Daniel Pahr

Raising awareness of climate topics, such as urban heat mitigation, requires communicating complex data to a broad audience. Data physicalization has emerged as a novel method to connect audiences to such complex topics through tangible forms while also leveraging interactivity to foster deeper engagement. This paper introduces an interactive climate physicalization prototype, designed to enhance communication and education of environmental information through hands-on engagement. The physical model depicts a 3D model of an urban neighborhood, with radiation data represented as a layered contour structure. The model incorporates three interchangeable climate adaptation scenarios, alongside an externally mounted, electronically driven solar path representation featuring multiple discrete LEDs that can be switched on and off at will. To investigate how people engage with the model, we conducted a hands-on qualitative lab study with 16 participants, using think-aloud, observational, and questionnaire protocols. Overall, participants responded very favorably to the model, highlighting the novelty of the visualization approach and its capacity to improve the interpretability of the presented information.

SPEAKER BIOGRAPHIES

Milena Vuckovic

Milena Vuckovic is heading a research group Visual Participatory Systems at the VRVis GmbH. Her research focuses on the visualization and analysis of the environmental response of urban systems under present and future climate and on advancing collaborative climate-sensitive urban development with the general public.

Marlene Huber

Marlene Huber is a researcher at VRVis GmbH (Visual Participatory Systems group) and a PhD student at TU Wien. Her main focus is on multivariate data communication in extended reality for the general public with a focus on climate and urban data.

Preprint: zenodo.org/records/23387825

Papers

#3 Exploring 3D Glyph Physicalizations for Public Engagement through River Health

Author(s): Maria Teresa Ortoleva, Min Chen, Rita Borgo, Alfie Abdul-Rahman

SPEAKER BIOGRAPHIES

Maria Teresa Ortoleva

Maria Teresa Ortoleva is a drawing, sculpture, and installation artist, and PhD researcher in the Human-Centred Computing group at King's College London. Her research explores Data Physicalization and uses artistic methodologies to engage the public in reflective material experiences around socially relevant issues, including mental wellbeing and the environment.

Preprint: arxiv.org/pdf/2609.09472

Introduction – In this paper, we present the preliminary design of a toolkit for making glyph-based physicalizations for public engagement. We use London river health data as a case study: a data set of significance to urban issues related to climate change and of interest to draw public attention, as part of the Greater London Authority's strategies. Design – We present the components of a 3D glyph-making toolkit, its encodings, and a step-by-step process for crafting a physicalization of a river's water quality using recycled materials. We reason about how users can use the template to learn about a data set while reflecting on the data's significance to their personal experience and self-mapping onto the physicalization. Reflection – We reflect on the opportunities that extending the design space of glyphs to 3D physicalization offers for supporting public engagement with complex, multi-dimensional data sets, scaffolding cognitive processes, and self-reflection, thereby bringing crucial environmental data to life. Conclusion – Future implementation of the 3D glyph template will enable the public of all abilities to explore river health data, physicalize complexity, and realize its relevance. We hope that its use in public engagement workshops will help raise awareness, invite care, and foster a sense of belonging.

Papers

#4 2D/3D visualization for ensemble forecasting of coastal submersion

Author(s): Julius Bañgate, Jacques Gautier, Sidonie Christophe, Déborah Idier, Denis Paradis, Alice Dalphinet, Sophie Lecacheux

SPEAKER BIOGRAPHIES

Julius M. BAÑGATE

PhD Computer Science from Université Grenoble Alpes, France, MSc in Remote Sensing and BSc Geodetic Engineering from the University of the Philippines-Diliman. Currently a Postdoctoral Researcher for the ANR-ORACLES Project at LASTIG, IGN, Geodata Paris, Université Gustave Eiffel, France. Works on 2D/3D geovisualization, multi-agent modelling and simulation of complex systems.

Jacques Gautier

Jacques Gautier is lecturer in geovisualization at LASTIG laboratory (Univ. Gustave Eiffel, IGN) and at Géodata Paris. His research topics covers spatio-temporal data and uncertainty visualization, with application in meteorological, urban climate, and urban mobility thematics. He is teaching visualization courses at Géodata Paris, ENPC, and AgroParisTech.

Preprint: hal.science/hal-05801805

Simulation models, generating meteo-oceanic conditions and submerged areas scenarios, are a major asset for forecasting coastal floods and prepare at risk populations. Forecasting is still performed by human operators, using visualization interfaces. In order to take model uncertainty into account in the determination of alert levels, advances in computing allow to perform ensemble simulation, by generating a set a possible scenarios. The visual interpretation of ensemble simulation outputs however requires specific approaches of visualization, allowing human operators to determine trends, identify outliers, and assess uncertainty, from many simulated scenarios at different spatial scales. While geospatial ensemble visualization approaches mainly use 2D representation of aggregated indicators, 3D interfaces could be a way to depict more precisely the distribution of ensemble at different spatial locations. We present 2D and 2D+1 visualization approaches aiming at helping forecasters to visually analyze ensemble simulation of submerged coastal areas, at different spatial scales and for different levels of complexity.

Papers

#5 Diegetic Data Stories for Climate Communication

Author(s): Zezhong Wang, Sheelagh Carpendale

SPEAKER BIOGRAPHIES

Zezhong Wang

Dr. Zezhong Wang is a Lecturer (Assistant Professor) in Human–Computer Interaction at the University of St Andrews. His research explores data-driven storytelling, information visualization, human–data collaboration, and qualitative visual methods, with a broader interest in bringing data into everyday life through visual storytelling and interaction.

Preprint: zenodo.org/records/23409254

We present seven strategies adapting dramatic-writing craft for cases where both data and character actions motivate the story, and two practice cases of climate data comics co-created by a cross-disciplinary group with climate scientists. From these cases, we contribute two things: 1) the framing of diegetic data stories, in which empirically grounded data, visualizations, and scientific arguments are told from within a storyworld; 2) a two-axis design vocabulary: structural strategies (plot, conflict, character) and explanation strategies (explaining a scientific concept within contextualized events) with seven named strategies that map climate-data characteristics, counter-intuitive or methodologically distributed, onto diegetic narrative form. On the structural axis, we suggest Misconception-as-Conflict (Misconception or misreading is voiced by a character and resolved on stage by an explainer character), and Detection-as-Plot together with Instrument-as-Character (the data investigation is the engine of the plot and each measurement instrument is personified as a character). On the explanation axis, we name Real-Event Grounding, In-world Experiment as Demonstration, In-world Visualization Production, and Felt-Phenomenon Anchor. We offer them as transferable design strategies for climate data communicators.

Papers

#6 From Data to Action: Applying Psychological Theories to Climate Visualisation Design

Author(s): Eva Mayr, Margit Pohl, Rita Borgo, Yuri Engelhardt, Mauro Martino

Visual communication of climate-aware behaviour to the public is a challenging subject due to the fact that information in such settings is often only processed in a superficial manner. This paper raises the question of which design elements can increase users' motivation to engage with visual information in more detail and can change their climate-related behaviour. We apply psychological theories (e.g., construal level theory, theories about gamification, prospect theory) to delineate design recommendations for climate visualisations motivating users to behave in more environmentally friendly ways. We apply these theories to the design of a prototypical interface. A focus group-based evaluation shows that these design recommendations have huge potential to impact behaviour, but have to be carefully implemented in the design. Grounding climate visualisations in psychological theories has great overall potential for increasing the impact of future systems to promote climate-aware behaviour.

SPEAKER BIOGRAPHIES

Eva Mayr

Eva Mayr is senior scientist at the University for Continuing Education Krems, Austria. With a background in applied cognitive and media psychology, her research interests lie in the psychological factors related to visualization design for the public.

Margit Pohl

Margit Pohl is Professor Emerita of Human-Computer Interaction at TU Vienna. Her work centers on visual analytics, cognitive psychology, and information visualization, with particular attention to user evaluation methods and gender-sensitive design.

Preprint: zenodo.org/records/23409806

Papers

#7 Not just maps: how school atlases shape understanding of climate

Author(s): Vít Voženílek, Radim Tolasz

SPEAKER BIOGRAPHIES

Dr. Vít Voženílek

prof. Dr. Vít Voženílek is Professor of Cartography and Geoinformatics at Palacký University Olomouc (Czech Republic) and UMCS Lublin (Poland). He has published dozens of papers on atlases and geovisualization and compiled 16 thematic atlases. He served as Vice-President of the International Cartographic Association for eight years.

Dr. Radim Tolasz

Dr. Radim Tolasz is a researcher at the Czech Hydrometeorological Institute. He specializes in climatological time series, databases, and climate change. He represents the Czech Republic on the Intergovernmental Panel on Climate Change and has collaborated with the World Meteorological Organization for several decades.

Preprint: zenodo.org/records/23372993

School atlases remain important educational tools, but their climate parts may strongly influence whether students understand climate as a static spatial pattern or as a dynamic system affected by variability, change, and risk. This issue is relevant because climate knowledge requires more than knowledge of temperature, precipitation, and climate zones. The aim is to compare how climate is presented in selected school atlases from different countries and to assess their cartographic, climatological, and didactic potential. The study addresses three research questions: which climate topics and cartographic methods are used; how strongly atlases reproduce a traditional, static concept of climate versus recent topics such as climate change and hazards; and what types of atlas-based climate representation can be identified. The research is based on a comparative content analysis of 13 school atlases published between 1996 and 2026. Single- and double-page climate spreads were examined using a binary content matrix that recorded the presence of 39 topics grouped into ten thematic groups. Cartographic methods were also classified, and the atlases were typified according to thematic breadth, multimodality, and inclusion of environmental issues. The results show that traditional climatological content dominates: temperature, precipitation, pressure, atmospheric circulation, ocean currents, and climate classifications are the most frequent topics. Only two atlases explicitly include climate change, emissions, hazards, or environmental impacts. The study proposes a typology of climate representation in school atlases and contributes a transparent framework for evaluating atlas content, supporting future atlas design and geography education.

Papers

#8 Insight Placement and Imagery in Climate Data Visualizations: Effects on Visual Attention and Perceived Climate Threat

Author(s): Dinko Bačić, Kathryn Glasgow

Visualizations are central to climate change communication, yet subtle layout decisions may change how viewers allocate attention and how urgent the climate crisis feels. We report an eye-tracking study that experimentally varies (1) where a key insight/takeaway is placed relative to a climate graph (inline annotation near the plotted data, subtitle, or bottom footnote) and (2) whether an adjacent image is shown near the visualization. Thirty-three undergraduate participants viewed five visualization conditions while gaze data (fixations and dwell time in predefined Areas of Interest) and post-stimulus perceptions (perceived climate threat) were collected. For insight placement, annotations near plotted data reliably captured attention to the insight region, whereas bottom footnotes promoted comparatively greater attention to the plotted data. Opinion on the climate crisis was affected when the insight was presented as a footnote. For imagery, adding an adjacent image reduced visual attention to the visualization itself, without a corresponding increase in perceived climate threat. Together, the results suggest that designers should treat text placement and adjacent imagery as attention-shaping interventions: integrated annotations can foreground key points, while footnotes may encourage deeper examination of evidence without competing for attention.

SPEAKER BIOGRAPHIES

Dinko Bačić

Dinko Bačić is an Associate Professor of Information Systems and director of Loyola University Chicago's UX & Biometrics Lab. His research spans data visualization, media engagement, digital choices, human-centered AI, and societal challenges. Using eye tracking and multimodal biometrics, he studies how information design shapes attention, emotion, and experiences.

Preprint: zenodo.org/records/23381763

Papers

#9 Visualisation as Cognitive Infrastructure: Narrative Cartography and the Co-construction of Climate Risk Knowledge in the MIRACLE Project

Author(s): Folco Soffietti, Paolo De Martino, Elena Ferraioli, Gianfranco Pozzer, Daniele Pagliari, Iris Brucculeri, Denis Maragno, Raffaella Fagnoni, Francesco Musco

SPEAKER BIOGRAPHIES

Folco Soffietti

Folco Soffietti is a researcher at Università Iuav di Venezia and a PhD candidate in Design Sciences. His research focuses on digital visualisation, information design and interactive tools for participatory policy processes, exploring how visual and digital interfaces can support stakeholder engagement, knowledge sharing and decision-making.

Preprint: zenodo.org/records/23103649

Climate change and multi-risk conditions increasingly challenge urban and coastal landscapes, demanding new approaches that integrate scientific knowledge with local perceptions and collaborative planning practices. This paper presents a design-driven methodological framework developed within the MIRACLE project, which aims to strengthen the resilience of urban and metropolitan areas through participatory, multi-scalar risk assessment. The framework positions visualisation; spanning empirical cartography, participatory mapping, and interactive storymaps; not merely as a means of representing analytical outputs, but as a cognitive infrastructure capable of connecting heterogeneous actors, knowledge domains, and spatial scales. Central to this contribution is the argument that climate risk knowledge can no longer be produced exclusively within academic or technical contexts or understood as mainly a technical thing; rather, it must be reconceptualised as a relation condition and negotiated and co-constructed together with the subjects who inhabit and plan the territories in question. Implemented through co-design workshops across several Italian coastal landscape sincluding Venice, Rimini, Ravenna, the Po Delta, Vicenza, Verona, Bagnoli, and Castellammare di Stabia– the methodology generated cartographic layers and narrative elements that were integrated into the MIRACLE storymap. Qualitative observations from the workshops indicate improved collective understanding of climate-related vulnerabilities, while the progressive refinement of visual artefacts across successive iterations demonstrates the potential of narrative cartography to support more horizontal and relational models of spatial knowledge production. The results contribute to emerging debates on participatory mapping, spatial storytelling, and science-to-policy communication in climate governance.

Workshops

All Workshops

1. **Vibe coding is not a crime: Visualizing public earth observation datasets with AI assistance in Copernicus Browser**
András Zlinszky

2. **The extremes of Amazonia: what recent droughts and record-breaking floods can teach us about using Earth observation data to communicate climate anomalies**
Gustavo Faleiros

3. **Designing interactive climate stories with data and depth**
Arianna Meroni, Bob Corporaal

4. **Designing for Climate Action: From Data to Decisions**
Cristina Jaramago Bertrand, Elena Palao, Karl Scheifinger

5. **Turning Climate Data into Comics and Visual Narratives**
Inés Martín del Real, Andria Nicodemou, Antonella Mele, Emma D'Orto, Marta Terrado

6. **The E3CI Data Station: Visualising Extreme Weather for Decision-Makers and Communities**
Simona Contaldi, Noemi Ambrosi, Cinzia Bongino

Workshops

#1 Vibe coding is not a crime: Visualizing public earth observation datasets with AI assistance in Copernicus Browser

Author(s): András Zlinszky

SPEAKER BIOGRAPHIES

András Zlinszky

András earned his PhD in Conservation Biology at Eötvös Loránd University, Budapest. For most of his science career, he developed earth observation methods for conservation mapping. As a science communicator, he worked for the Veszprém-Balaton European Capital of Culture, co-curating the Balatorium ecological art program. He is currently the Community Evangelist of Copernicus Data Space Ecosystem.

Public Earth Observation datasets such as Sentinel satellite imagery and Copernicus Land Monitoring Service are an essential source for information about climate processes. Copernicus Data Space Ecosystem (CDSE) enables free public access and cloud-based analysis.

We will learn how to create visualisations in Copernicus Browser, a web browser based free tool that also supports custom code. Datasets of true color and radar imagery, thermal maps and air pollution rasters will be explored together with ready-made data products for land cover and various bio-geophysical parameters. Static, shareable images, 3D views, timelapse animations and web-ready OGC services will be shown as creating output products.

Next, we will dive into custom analysis and visualisation algorithms. AI assistants are highly proficient with CDSE APIs, so changing color scales, combining products of different algorithms, analysing several data sources together are all within reach even for people with no prior coding experience.

Finally, we will explore the Jupyter Lab as a platform for quantitative analysis and map integration. CDSE supports tools that enable the calculation of zonal statistics, time series or even advanced classification. Again, AI assistants can be used for natural language based code development and output product validation.

By the end of this course, you will be equipped for performing data analysis on one of the largest public cloud repositories of earth observation data globally, and for further improving your skills independently.

Workshops

#2 The extremes of Amazonia: what recent droughts and record-breaking floods can teach us about using Earth observation data to communicate climate anomalies

Author(s): Gustavo Faleiros

SPEAKER BIOGRAPHIES

Gustavo Faleiros

Gustavo Faleiros is an environmental journalist based in Brazil. In 2012, he co-founded InfoAmazonia, a project that uses satellite imagery and other publicly available data to report on the nine Amazon rainforest countries. He served as director of Environmental Investigations at the Pulitzer Center for 5 years, during which he launched the Rainforest Investigations Network (RIN).

Over the past decade, the Amazon has experienced some of the worst droughts and floods on record. These extreme weather events have had economic impacts on cities in the region, cutting off communities from basic services. But these extreme events also have regional-scale effects, influencing the weather in neighboring regions of the Amazon. Either through massive pollution caused by forest fires or devastating rains, the impact of climate change in the Amazon is felt much further than the forest.

Explaining the complexity of these interconnected systems is a challenge for researchers and communicators. Nevertheless, we will show in this workshop examples of successful visualizations that were effective in connecting audiences to the concerning fate of the Amazon. Also, we will guide the participants on how to replicate the methodologies in other parts of the world, other environments than the rainforest.

Participants will be introduced to methodologies for visualizing environmental data, such as satellite imagery and large earth observation databases. We will work with data on precipitation, wildfires, deforestation, and carbon biomass density from sources such as NASA and Planet.

As a journalist covering the region for 25 years, I have been training journalists and other communicators in the techniques of "narrating the territory" in the Amazon and in other regions of the world. Projects like InfoAmazonia, InfoNile and InfoCongo, that will be shared as examples of using geospatial data in journalism.

The main takeaway from this workshop will be the capacity to combine data and stories to communicate climate anomalies.

Workshops

#3 Designing interactive climate stories with data and depth

Author(s): Arianna Meroni, Bob Corporaal, Pietro Lodi

SPEAKER BIOGRAPHIES

Arianna Meroni

Arianna is a UX Designer at CLEVER°FRANKE. She designs at the intersection of data and experience, crafting products that seamlessly blend data-driven insight with aesthetic appeal, built to meet and exceed user expectations and perform with precision and clarity.

Bob Corporaal

Bob Corporaal is Design Principal at CLEVER°FRANKE, a leading Dutch data design agency that turns complex information into clear, intuitive experiences. Across a wide range of domains, his work centers on making data approachable that help people understand the world around them and act on what they learn.

Climate data is nuanced, operates at multiple time and geographic scales, and rarely speaks for itself. Translating this data into a visualization or interactive application with a compelling story or insight for the right audience, at the right depth, is rarely straightforward.

In this hands-on workshop, we introduce three practical frameworks we use daily at CLEVER°FRANKE, an award-winning data design studio whose projects range from dashboards tracking the climate impact of investments and stories about migration across Africa driven by climate change, to generative festival posters reflecting local weather data.

Together, these frameworks guide our designers and clients from an initial idea, through understanding their audience and choosing the right form, to layering data and narrative with the right depth and functionality. We look forward to sharing these frameworks and offering a peek at how they shape our design practice.

In this 90-minute session, we use examples from our client projects to walk through how each framework works and how we apply them. Participants then work with each framework using their own existing project or an imagined one as a reference. The frameworks build on each other, so each step adds depth to the previous one.

Participants leave with a set of simple, memorable frameworks to bring back to their teams and use immediately.

The session is open to anyone who works with data to tell stories or share insights. No design experience needed, only an eagerness to share insights and tell stories.

Workshops

#4 Designing for Climate Action: From Data to Decisions

Author(s): Cristina Jaramago Bertrand, Elena Palao, Karl Scheifinger

SPEAKER BIOGRAPHIES

Cristina Jaramago Bertrand

Cristina Jaramago Bertrand is a skilled visual designer with a passion for creating impactful digital experiences. Cristina's expertise spans art direction, interactive and prototype design, UI design, and the development of scalable digital products. Her ability to solve complex problems and craft intuitive, visually compelling solutions defines her work.

Elena Palao

Elena Palao is a Senior Data Scientist at Vizzuality. Her work connects geospatial analysis, environmental science, and the frameworks organisations use to act on nature and climate risk. She focuses on turning complex spatial data into tools that support real decisions, and on making the analysis behind them rigorous enough to trust and clear enough to use.

Karl Scheifinger

Karl Scheifinger is a researcher in the Integrated Assessment and Climate Change Research Group of the IIASA Energy, Climate, and Environment Program. Recently, he worked on the Second Austrian Assessment Report on Climate Change and a comprehensive assessment of Austrian climate policies. Currently, Karl is coordinating the Scenario Compass Initiative.

Vizzuality is submitting a workshop proposal in collaboration with the International Institute for Applied Systems Analysis (IIASA). Through this contribution, we aim to enrich the conversation and share our joint perspective on applied science and data visualization in the context of climate science and environmental impact.

The goal is to share Vizzuality's experience designing tools that help people better understand—and make decisions about—climate and nature systems, as well as to bring forward our work with IIASA on the Scenario Compass Initiative, a platform designed to facilitate navigation of climate future scenarios using the most up-to-date data-driven models.

This hands-on workshop presents Vizzuality's approach to designing digital tools that support the interpretation and decision-making of climate and environmental systems, using as a reference one of the platforms developed in collaboration with the International Institute for Applied Systems Analysis (IIASA), the Scenario Compass Initiative Platform.

Participants will explore how large complex data related to climate drivers can be transformed into decision-support interfaces and learn practical design techniques for communicating uncertainty, complexity, and long-term environmental change.

1. What makes a good climate decision tool? (15 min)

2. Framing the challenge (10 min)

3. Hands-on design activity (40 min)

4. Rapid sharing and critique (20 min)

5. Reflection and takeaways (5 min)

Workshop outcomes Participants will:

Learn practical techniques for climate data visualisation

Explore design patterns for decision-support tools

Understand how to communicate uncertainty effectively

Learn how to understand user needs and link scientific outputs to those needs

Workshops

#5 Turning Climate Data into Comics and Visual Narratives

Author(s): Inés Martín del Real, Andria Nicodemou, Antonella Mele, Emma D'Orto, Marta Terrado, Arianna Acierno

SPEAKER BIOGRAPHIES

Andria Nicodemou

Andria Nicodemou is a climate science communicator in the Knowledge Integration team of the Earth Sciences department at the Barcelona Supercomputing Center, translating complex climate concepts into accessible content within European projects.

Inés Martín del Real

Inés Martín del Real is a science communicator in the Knowledge Integration Team of the Earth Sciences Department at the Barcelona Supercomputing Center, working on European projects and exploring creative ways, including science comics, to bring climate science to wider audiences.

Emma d'Orto

Emma D'Orto is a Science Communication Specialist at the CMCC Foundation, working on climate change adaptation projects. Her background spans Physics, science communication, education, and filmmaking.

Antonella Mele

Antonella Mele is a Science Communication Specialist at the CMCC Foundation (since 2023), working on European climate adaptation projects. Her background spans Biology, Global Change Ecology, and science communication.

Communicating complex climate data and concepts, such as overshoot and uncertainty, remains a challenge when engaging non-expert audiences. Effective visual communication approaches can bring complex data to life, not just presenting it, but also driving the story. This makes information more accessible and intuitive for diverse audiences, enabling deeper understanding and more meaningful interaction.

In this workshop, we will examine how comics and other visual communication formats can complement traditional data visualisation approaches by embedding quantitative information within storytelling, and using visual metaphors and simplified graphical representations.

First, we will introduce data-driven storytelling formats like comics, infographics or interactive web stories, and explore with participants how underlying data (e.g. temperature overshoot, emission scenarios) are transformed into narrative elements. We will discuss with the audience best practices and processes for developing such visual formats, and for preserving the balance between engagement and scientific robustness.

Next, the workshop will focus on a hands-on group activity in which participants create a short comic (1-3 panels) based on provided climate data or concepts. This exercise will allow participants to experiment with translating data into visual narratives that retain meaning while increasing accessibility.

By the end of the session, participants will have gained practical experience in narrative data visualisation and a transferable method for communicating complex climate data.

Workshops

#6 The E3CI Data Station: Visualising Extreme Weather for Decision-Makers and Communities

Author(s): Simona Contaldi, Noemi Ambrosi, Cinzia Bongino

SPEAKER BIOGRAPHIES

Simona Contaldi

Simona Contaldi is a Marketing & Communication Specialist at Fondazione IFAB (Bologna), working at the intersection of institutional communication, science outreach, and strategic marketing to advance understanding of Artificial Intelligence and HPC. She manages communications for E3CI (European Extreme Events Climate Index) and EuroCC Italy.

Noemi Ambrosi

Noemi Ambrosi is a climate data scientist and educator at the IFAB Foundation in Bologna since 2024. She designs data pipelines in the field of climate extreme events and forecasts of renewable energy production.

Cinzia Bongino

Cinzia is a graphic, information, and web designer from Turin, Italy. She mainly works on projects where UX/UI design meets data visualisation. Since 2024, she has taught a postgraduate course in UX/UI design and a Data Visualization course in Milano.

Europe is experiencing increasingly frequent and severe extreme weather events. To improve public awareness of climate change, effective tools for communicating and visualising these phenomena are essential.

This workshop introduces the European Extreme Events Climate Index (E3CI), a new index designed to measure extreme events and track long-term climate trends. The E3CI combines seven climate hazard components - heat waves and cold waves, drought, heavy precipitation, wind, hail, and forest fires - into standardised monthly indicators based on Copernicus ERA5 reanalysis data, referenced against a 1981–2010 baseline.

It is accessible via the Data Station (https://datastation.climateindex.eu/), an interactive platform that lets users explore data at national, regional, and provincial levels, helping to understand patterns and trends without technical expertise.

During this 90-minute hands-on workshop, participants will be guided in understanding an extreme weather event and how it is measured through the E3CI. They will learn how to interpret the Index components, and work with open climate datasets. Through guided exercises (e.g., Jupyter notebooks), attendees will explore real case studies of recent extreme events across Europe, comparing climate trends over time and discovering how visual design choices shape the perception and understanding of the climate situation.

Based on their outputs, participants will also create a navigable web page using Quarto, serving as both a collective portfolio of the workshop and a structured, narrative presentation of specific extreme events: the weather records.

The session will conclude with a collaborative discussion where participants share findings and reflect on effective visualisation strategies.