

International Interdisciplinary Conference

Digitalization for Sustainability Transformations:

Critical Perspectives, Lessons Learned,
and Future Prospects



Conference Programme

at the **University of Augsburg, Germany**

20–22 September 2023

This conference will be held **in-person** and brings together digitalization and sustainability scholars for a vibrant exchange across disciplinary boundaries.

The conference programme includes four keynote speeches, a round table and various panels with paper presentations. The keynote and the roundtable discussion on 21 September, 4 to 6pm will be streamed online and will be accessible to the general public. The streaming link will be published on www.uni-augsburg.de/philsoz/digi.

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UNA Universität Augsburg
Centre for
Climate Resilience

Research questions addressed at the conference

Digitalization for sustainability transformations:

Critical perspectives, lessons learned, and future prospects

1. Understandings of the digitalization–sustainability nexus

How is sustainability understood and discussed in the context of digitalization? What notions of digitalization exist in the field of environmental sustainability? What understandings of both concepts have emerged to tackle so-called (super-)wicked sustainability problems? What are the policy implications of these different framings, narratives, and discourses? How is the nexus between digitalization and sustainability made “governable”?

2. Analysing actors, discourses, and politics of the digitalization–sustainability nexus

Which actors drive the discourse on digital transformation and sustainability, and how has this changed over time? What are the prevailing interests and discourse/ actor coalitions? Are there patterns of coloniality? How and to what extent are issues of digital transformation and sustainability contested and politicized, but also normalized and depoliticized? How is technology framed in the debate around digitalization and sustainability? How and why are certain technological solutions featured and mainstreamed, while others – especially social innovations – are marginalized?

3. Designing digitalization policies and technology to foster sustainability

What digital solutions have been proposed and for which sustainability challenges? What forms of data governance are needed for sustainable development? How can human-centred design enable sustainability transformations? How does and should regulation influence sustainable technology design? Which policies at the digitalization–sustainability nexus have been adopted by political actors, how have they evolved, and what outcomes do they deliver? How can digital transformation be achieved while respecting social welfare, the limits of the planet, and the need for democratic participation? What differences in policies and outcomes can be observed in different countries around the world, and how can these differences be explained?

4. Studying polity, power, institutions, and decision-making procedures

How do the use of digital technologies and the data resulting from it change decision-making practices in the field of environmental sustainability policy? Which sites and procedures govern the nexus between digitalization and sustainability? Which power structures (e.g. monopolies) hinder or enable decision-making at the interface between digitalization and sustainability? What kinds of power relations are inherent in the design of digital technologies? To what extent are patterns of territorial and structural coloniality and extractivism at work? What is the potential for democratizing decision-making processes (e.g. through social innovations or civic tech solutions)? Which new legal and organizational forms may allow civil society to participate in political decision-making?

5. Using digital methods to understand sustainability transformations

How can digital and AI-based social science methods enhance our understanding of sustainability transformations? How can digital technologies be used to gather, analyse, and interpret data on sustainability and governance? What are the technological and epistemological limitations of digital methods? How can these methods be made available to and benefit people in the Global South and the Global North?

Our four keynotes



Sustainability imaginaries by design

Dr. Roy Bendor explores the capacity of design to disclose alternative social, political and environmental futures. With a background in media studies, philosophy of technology, and environmental communication, he is currently Assistant Professor of Critical Design at the Faculty of Industrial Design Engineering at Delft University of Technology (Netherlands). Roy is also Fellow of the Urban Futures Studio at Utrecht University, former editor of the sustainability forum in the ACM's magazine *Interactions*, and author of *Interactive Media for Sustainability* (Palgrave, 2018).

Algorithmic Climate Governance: Reproducing hegemony or radical transformation?

Dr. Ruth Machen is a Lecturer in Urban Planning at Newcastle University (UK), researching the political implications of digital technologies in climate change governance. A human geographer by background, with former policy experience, her work draws from empirical research in the UK and USA on the use of digital models, platforms and interfaces in the making of climate policy. Focusing on unpacking the politics of knowledge at the climate science-policy interface, she draws from environmental governance scholarship, postfoundational political theory, and critical digital scholarship in human geography and STS. She has also contributed to debates on research impact and the role of critical scholarship in societal transformations.



Digital futures with civic tech initiatives and their relationship with narratives on environmental issues and civic participation

Teresa Cerratto Pargman, Ph.D., is a Human-Computer Interaction (HCI) Professor at the Dept. of Computer and Systems Sciences at Stockholm University (SU). With a background in Psychology, Pedagogy, and Cognitive Science, she conducts conceptual and empirical studies on emerging technologies and practices in the public sector drawing from perspectives on the philosophy of technology and science and technology studies. She is interested in contributing methodologically to studying digital transformation for a sustainable planet. Teresa is a member of the Executive Committee and Associate Director of Societal Outreach at Digital Futures in Sweden.

Planning a just transition from coal in India: Digitisation of data and the possibility of subversions in mineral resource governance

Radhika Krishnan, Ph.D., is an Assistant Professor with the Human Sciences Research Group, IIIT Hyderabad, India. She has been working in the broad domain of political ecology and technology studies for the past two decades. An electrical engineer by training, her interest in studying the interface between technological regimes, local communities and ecologies led her to shift her research focus to the social sciences. During her tenure at IIIT she has been working on the ways in which digital tools can be integrated into research on issues around mineral extractions, specifically coal. Currently she is collaborating with colleagues from Sweden, Australia and the UK on two projects on 'Just Transitions' in India.



Programme

Wednesday, 20 September 2023

Location: Centre for Climate Resilience (ZfK), room 1201/2
(building I.1, Universitätsstr. 12, 86159 Augsburg)

2.30 pm – Arrival and welcome coffee
3.00 pm

3.00 pm – Welcome by host Angela Oels and organizing team
3.10 pm

3.10 pm – Introduction to the conference by Rainer Rehak (Weizenbaum Institute)
3.30 pm “Artificial Intelligence for real politics? A political contextualization”

3.30 pm – Keynote speech by Roy Bendor (Delft University of Technology)
4.30 pm “Sustainability imaginaries by design”
Chair: Sabine Weiland (Université Catholique de Lille)

4.30 pm Coffee break

4.45 pm – Panel “Steering the digital and sustainability transition”
6.15 pm
Chair: Sabine Weiland (Université Catholique de Lille)
Discussant: Rainer Rehak (Weizenbaum Institute)
Room: ZfK 1201/2

Sustainability narratives in digitalization research funding
Mario Angst (University of Zürich)

Sustainability, key to responsible AI? Critical overview of a concept and way forward
Marie Francisco (Linköping University, Sweden)

Digital positionality: Empowering netizens to navigate ICT for a sustainable and just future
Anna Lena Menne (Humboldt-Universität zu Berlin),
Alissa Steer, and Makëda Gershenson

7.00 pm Conference dinner (not included in conference fee, participants order and pay themselves)
Restaurant “Il Porcino” (on university campus), Salomon-Idler-Str. 24b, 86159 Augsburg

Panel “Smart cities”

Chair: Angela Oels (University of Augsburg)
Discussant: Pascal König (German Corporation for International Cooperation)
Room: ZWW Auditorium, building I.1

Social sustainability and smart cities

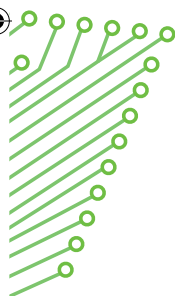
Ulrike Zeigermann (Julius-Maximilians-University of Würzburg), Julia Schwanholz, David Gelantia, and Helene von Schwichow

Strengthening the competence of municipal actors in rural areas for the development of user-centric, sustainable digitalization strategies

Andrea Hamm (HNE Eberswalde), Josephine Jahn, Klaus Markgraf, Benjamin Nölting, Tobias Schröder, Julia Struß, and Heike Walk

Smart green, resilient and climate neutral cities in the making

Claus Seibt (University of Economics and Environment, Nürtingen-Geislingen, Germany)



Thursday, 21 September 2023

9.15 am – Digital keynote speech by Ruth Machen (Newcastle University):

10.15 am

*“Algorithmic climate governance:
Reproducing hegemony or radical transformation?”*

Chair: Jens Marquardt

(Technical University of Darmstadt)

Room: Centre for Climate Resilience (ZfK), building I.1, room 1201/2

10.15 am

Coffee break

10.45 am –

**Panel “Agriculture, digitalisation, and
democracy”**

12.15 pm

Chair: Pascal König (German Corporation for International Cooperation)

Discussant: Sabine Weiland (Université Catholique de Lille)

Room: ZWW Auditorium, building I.1

What the #Sd? Landscape digitisation linking food choices and production

Joshua Zeunert (UNSW Sydney Australia)

digital

Potential and limitations of climate modeling for agricultural land use planning

Hannah Jona von Czettritz (Leibniz Centre for Agricultural Landscape Research)

**Analyzing popular German non-fiction on climate crisis and digitalization: Diverse or
homogeneous?**

Jan Doria (Hochschule der Medien, Stuttgart)

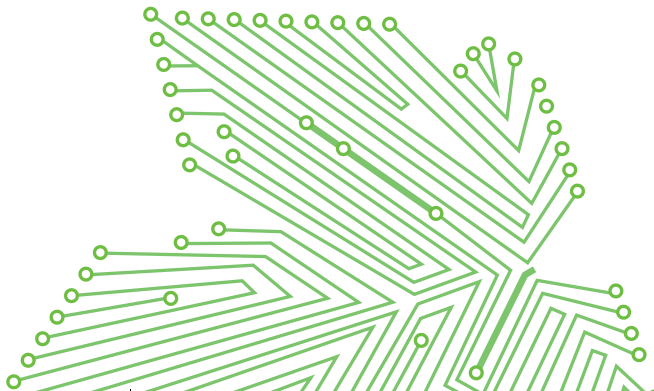
**How AI affects different dimensions of democracy over time: A reflection on AI's impact on the
societal pillar and SDG16**

Ahmed Maati (Technical University of Munich)

12.15 pm –

Lunch break

1.45 pm



Continued, Thursday, 21 September 2023

1.45 pm – 3.15 pm	<p>Panel “Smart energy” Chair: Florian Steig (University of Vienna) Discussant: Jörg Radtke (Research Institute for Sustainability – Helmholtz Centre Potsdam) <i>Room:</i> ZfK 1201/2</p> <p>Buildings are key for climate change: Building the (digital) knowledge base and driving action Jonas Schoenefeld (Institute for Housing and Environment Darmstadt) and Michael Hoerner</p> <p>Public opinion on smart energy technologies Eva Fleiß (University of Graz) and Stefanie Hatzl</p> <p>Determinants of electricity consumption by private households. Results of a scoping review on smart meter usage Caroline Dotter (OTH Regensburg), and Miriam Vetter</p> <p>Policy implications of digitalisation pathways for lower energy demand Noam Bergman (University of Sussex) and Tim Foxon</p>	<p>Panel “Sustainable organizational development through ICT” Chair: Rainer Rehak (Weizenbaum Institute) Discussant: Andrea Hamm (Weizenbaum Institute) <i>Room:</i> ZWW Auditorium, building I.1</p> <p>Stay grounded, go virtual? Potentials and challenges of transforming knowledge intensive organizations towards sustainability through an increased reliance on virtual solutions Anna Schreuer (University of Graz), Romana Rauter, Kathrin Winkler, and Eva Fleiß</p> <p>Sustainable digital co-creation in the public sector: establishing practices and measuring outcomes Noella Edelmann (University of Continuing Education Krems)</p> <p>Revealing the socio-ecological effects of digital infrastructures and shaping digitization in a more sustainable way Sigrid Kannengießer (University of Münster)</p> <p>Data co-constructions: Digital urban governance for sustainable smart cities Mennatullah Hendawy (Ain Shams University & Impact Circles e.V.)</p>
3.15 pm	Coffee break	
4.00 pm – 4.45 pm	<p>Keynote speech by Teresa Cerratto Pargman (Stockholm University), with online streaming: “Digital futures with civic tech initiatives and their relationship with narratives on environmental issues and civic participation” Chair: Angela Oels (University of Augsburg) <i>Room:</i> Centre for Climate Resilience (ZfK), building I.1, room 1201/2 AND livestream here: www.uni-augsburg.de/philsoz/digi</p>	
4.45 pm	Coffee break	
5.00 pm – 6.00 pm	<p>Roundtable “Digitalization for sustainability: Top-down or bottom-up transformations?” with Radhika Krishnan (IIIT Hyderabad), Teresa Cerratto Pargman (Stockholm University), and Andrea Hamm (Weizenbaum Institute for the Networked Society) Chair: Angela Oels (University of Augsburg) <i>Room:</i> Centre for Climate Resilience (ZfK), building I.1, room 1201/2 AND livestream here: www.uni-augsburg.de/philsoz/digi</p>	
7.00 pm	<p>Dinner & Beer garden (not included in conference fee, participants order and pay themselves) <i>Restaurant “Riegele Wirtshaus”, Frölichstraße 26, 86150 Augsburg (near Augsburg main station)</i></p>	

Friday, 22 September 2023

9.15 am –
10.45 am

Panel “ICT for circular economy”

Chair: Jens Marquardt (Technical University of Darmstadt)

Discussant: Marcus Wagner (University of Augsburg)

Room: ZfK 1201/2

Drivers and barriers in the transformation of SMEs towards more circularity and potentials of digitalization to overcome these barriers

Lena Brück (Fraunhofer-Institut für Angewandte Informationstechnik FIT), Anja Linnemann & René Reiners

Understanding digital enablers for acircular future

Al-Amin Dabo (University of Northampton)

Managing value network reconfiguration impacts on circularity and sustainability through digital product passport and data spaces

Alexander Schneider (Fraunhofer FIT)

Selecting transformative policies in a twin transition: A situational approach

Daniel Wurm (Wuppertal Institut für Klima, Umwelt, Energie gGmbH)

Panel “Data-driven resource control”

Chair: Angela Oels (University of Augsburg)

Discussant: Florian Steig (University of Vienna)

Room: 1309/10, building I.2

Unveiling motivations and abilities for adopting the Internet of Things (IoT) environmental monitoring: Digital opportunity or a threat?

Tanya Baycheva-Merger (University of Freiburg)

Behavior, compliance and attitudes to digital and traditional control methods

Florian Diekert (University of Augsburg), Linda Nøstbakken and Andries Richter

Emerging ‘Technological Zones’ at the climate-biodiversity interface: Nature tech coming to ‘rescue’ NBS?

Anouk Fransen (Utrecht University)

Harnessing connected and automated mobility for sustainable urban futures

Emilia M. Bruck (Technical University Vienna)

10.45 am

Coffee break

11.00 am –
12.00 pm

Keynote speech by Radhika Krishnan (IIIT Hyderabad):

“Planning a just transition from coal in India: Digitisation of data and the possibility of subversions in mineral resource governance”

Chair: Pascal König (German Corporation for International Cooperation)

Room: Centre for Climate Resilience (ZfK), building I.1, room 1201/2

12.00 pm –
12.30 pm

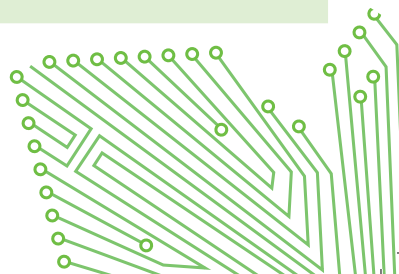
Closing remarks

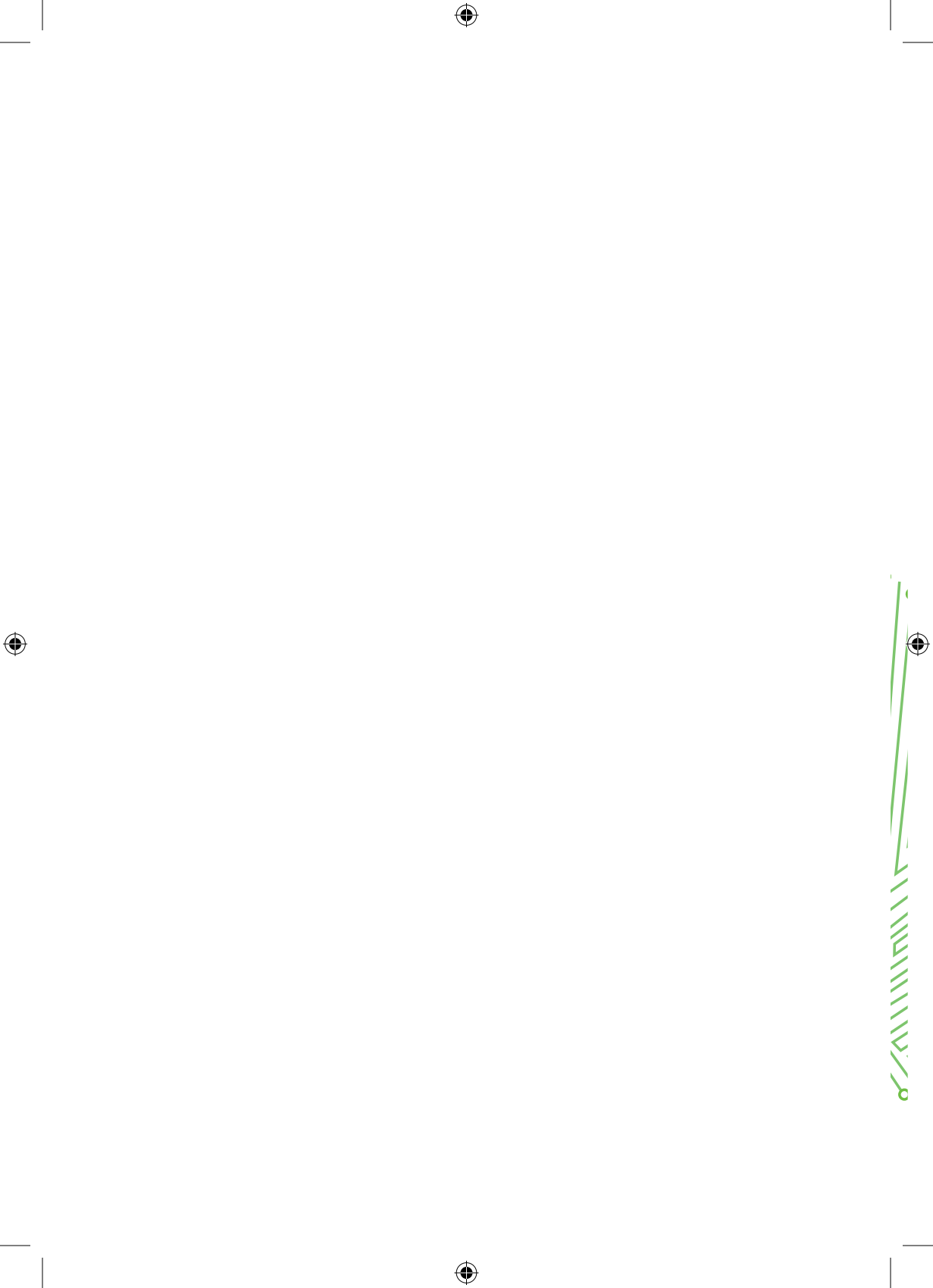
12.30 pm

Lunch

1.00 pm

End of conference





Conference information

Location: Centre for Climate Resilience, University of Augsburg,
Universitätsstr. 12, 86159 Augsburg, Germany

How to reach the Centre for Climate Resilience,
University of Augsburg (www.uni-augsburg.de/philsoz/digi)

Participation: The conference is held in-person with registered participants. Participation without a presentation is possible for a limited number of 20 people. Those interested in participation can apply by submitting a short statement of 150 words on why you are a good fit for the conference before 7 August 2023 here:
<https://cloud.weizenbaum-institut.de/apps/forms/RpWq9bPwZwHcdkfY>

The keynote speech and subsequent roundtable on 21 September 2023, starting at 4.00pm will be streamed online. The link will be made available on the conference website www.uni-augsburg.de/philsoz/digi.

Contact: If you have questions about the conference, please e-mail
digital@ccr.uni-augsburg.de

Organizers: **Working Group for Digitalization and Politics,
German Political Science Association, DVPW**

Prof. Dr. Angela Oels, University of Augsburg, Germany
(main organizer and local host)

Dr. Pascal König, German Corporation
for International Cooperation (GIZ), Eschborn, Germany

Florian Steig, University of Vienna, Austria

**Working Group for Environmental Politics/Global Change,
German Political Science Association, DVPW**

Dr. Jens Marquardt, Technical University of Darmstadt, Germany

Prof. Dr. Sabine Weiland, Université Catholique de Lille, France

**Working Group for Energy Transformation,
German Association for Political Science, DVPW**

Dr. Jörg Radtke, Research Institute for Sustainability –
Helmholtz Centre Potsdam, Germany

Research Group “Digitalization, Sustainability and Participation”

Dr. Andrea Hamm, Weizenbaum Institute for the Networked Society –
The German Internet Institute, Berlin, Germany

Rainer Rehak, Weizenbaum Institute for the Networked Society –
The German Internet Institute, Berlin, Germany





Directions to the conference venue

The conference organisers encourage the use of environmentally friendly modes of transport, like trains and public transport to reach the conference venue.

Centre for Climate Resilience, University of Augsburg
Universitätsstr. 12
86159 Augsburg

By public transport (marked in green on the map):

tram line 3, from city centre or central station, direction to "Haunstetten West P+R" or "Königsbrunn", the tram takes around 15 minutes to reach the stop "Universität", from there walk to the black building I.1.

By car (marked in red on the map):

if you are on the A8 Munich-Stuttgart take the exit "Augsburg-West", continue on the B17 in the direction of Landsberg, after ten minutes, take the exit "Messe/Universität" and follow the signs to the University. You can find car parking on P6, from there walk to the black building I.1.



