

ÖAW

AUSTRIAN
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Euro-CASE
Academies of Engineering Sciences



EURO-CASE ANNUAL CONFERENCE 2025

COMPLEX SYSTEMS

SHAPING THE FUTURE FOR A RESILIENT SOCIETY

SEPTEMBER 29, 2025
AUSTRIAN ACADEMY OF SCIENCES
FESTIVE HALL
DR. IGNAZ SEIPEL-PLATZ 2
1010 VIENNA, AUSTRIA



CONFERENCE GOAL

Real-world systems – whether environmental, societal or technological – are inherently complex. They involve nonlinear interactions, feedback loops, delays, and emergent behaviors that challenge traditional, siloed approaches. Our goal is to explore how we can better understand and manage these systems to increase societal resilience.

ADDRESS TODAY'S MOST PRESSING CHALLENGES

From climate instability to healthcare system shocks and energy transitions – modern problems are deeply interconnected. This symposium tackles these challenges through the lens of complex systems, offering new ways to understand and act on them.

THINK BEYOND THE SILOS

Complex problems don't fit neatly into disciplines. This event brings together voices from science, engineering, policy and society to build cross-disciplinary insights and solutions, encouraging new connections that mirror the interwoven nature of the challenges we face.

EXPLORE HIGH-LEVEL, ACTIONABLE IDEAS

We're not just dissecting problems – we're imagining bold, conceptual strategies that can lead to real-world impact. Expect big-picture thinking grounded in practical applications.

BUILD A MORE RESILIENT FUTURE

Learn how resilience can be designed into systems – from ecosystems to infrastructure – and how that mindset can help society adapt and thrive amidst uncertainty.

CONNECT, COLLABORATE AND INNOVATE

Meet leading thinkers, practitioners and change-makers. This is a unique opportunity to form meaningful partnerships and spark innovative projects that extend well beyond the symposium.

PROGRAMME

08:00 **Registration**

08:30 **Welcome Coffee**

09:00 **Welcome**

Heinz Fassmann | President of the Austrian Academy of Sciences

Eloy Alvarez Pelegry | Euro-CASE Chair

Dimitra Simeonidou | Member of the group of Chief Scientific Advisors at Scientific Advice Mechanism (SAM) of the European Commission

Günter Blöschl | Conference Chair, Austrian Academy of Sciences

09:30 **PANEL ON HEALTH**

presentations of 15 minutes each

Moderator: Andreas Bergthaler | Centre for Molecular Medicine of the Austrian Academy of Sciences and Medical University of Vienna

Stefan Thurner | Complexity Science Hub Vienna and Medical University of Vienna, Austria
Health care – a complex system

Al Ozonoff | Broad Institute of MIT and Harvard, USA
Decentralizing predictive epidemiology: From local practice to global foresight

Maja Schlüter | Stockholm University, Sweden
Making sense of messy societal change processes – implications of complexities for theorizing and action

Barbara Prainsack | University of Vienna, Austria
The power of ‘gardening’: Cultivating resilience in policy making

11:30 **LUNCH**

12:45 **PANEL ON ENERGY**

presentations of 15 minutes each

Moderator: Georg Brasseur, Graz University of Technology

Reinhard Hüttl | EEI Eco-Environment Innovation and acatech – National Academy of Science and Engineering, Germany
Soils, climate change and renewable energy

Robert Schlögl | Alexander von Humboldt Foundation, Germany
Energy: A Real-World System in Transition

Stefan Freunberger | ISTA – Institute of Science and Technology Austria
Electrochemical Energy Storage in the Energy Transition

Louis de Fontenelle | Université de Pau et des Pays de l’Adour, France
Law, Complexity and Energy Transitions: Building Resilient Pathways for the Future

14:45 **COFFEE BREAK**

15:30 **PANEL ON ENVIRONMENT**

presentations of 15 minutes each

Moderator: Iris Eisenberger, University of Vienna

Alberto Montanari | University of Bologna and ITATEC – Italian Academy of Engineering and Technology, Italy
Is complexity the reason for limited predictability of environmental extremes?

Jürgen Kurths | PIK – Potsdam Institute for Climate Impact Research and Humboldt University, Germany
Climate Meets Complex Systems: Exploring Teleconnections in the Climate System via a Complex Network Approach

Sean Downey | The Ohio State University, USA
Adaptive self-organization in swidden agriculture

Alice Vadrot | University of Vienna, Austria
Negotiating complexity: the future of science in multilateral environmental diplomacy

17:30 **Closing**

Günter Blöschl | Conference Chair, Austrian Academy of Sciences

Tom Leahy and **Tim Chapman** | The Irish Academy of Engineering (Ireland) and The Royal Academy of Engineering (UK), Co-Hosts of the 2026 Euro-CASE Annual Conference

Eloy Alvarez Pelegry | Euro-CASE Chair

18:00 **Cocktail Reception**



The Austrian Academy of Sciences (OeAW) is Austria's largest non-university research and science institution. Its statutory mission is to "promote science in every way".



The European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE) is an independent non-profit organisation of national academies from 22 European countries. Since 2008, Euro-CASE has organised an annual conference in collaboration with one of its member academies.

PROGRAM COMMITTEE

Günter Blöschl | Austrian Academy of Sciences (Austrian Euro-CASE representative and conference chair)

Andreas Bergthaler | Centre for Molecular Medicine of the Austrian Academy of Sciences and Medical University of Vienna

Judith Bovensiepen | Institute for Social Anthropology of the Austrian Academy of Sciences

Georg Brasseur | Graz University of Technology

Iris Eisenberger | University of Vienna

Alexia Fürnkranz-Prskawetz | Vienna University of Technology and Vienna Institute of Demography of the Austrian Academy of Sciences

VENUE

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Festive Hall, 1st floor
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ORGANISER

Austrian Academy of Sciences (OeAW)
The European Council of Academies of Applied Sciences, Technologies and Engineering (Euro-CASE)

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REGISTRATION

Please register at
https://www.euro-case.org/all_annual-conference/annual-conference-2025/



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