



ACCADEMIA NAZIONALE DEI LINCEI

International Conference

## CURRENT ISSUES IN CLIMATE RESEARCH

September 9-10, 2021

PROGRAMME

*Scientific and Organizing Committee:* Giorgio PARISI (Chair), Bruno CARLI (Co-chair), Enrico ALLEVA, Francesco BERRILLI, Paola BONFANTE, Claudio CARERE, Ignazio MUSU, Giuseppe OROMBELLI, Andrea RINALDO, Giovanni SEMINARA, Thomas STOCKER

**September 9, 2021**

### Opening session. Chair: Bruno CARLI

9.00 Welcome addresses

Giorgio PARISI, President of the Class of Physics, Mathematics and Natural Sciences of Accademia Nazionale dei Lincei  
Roberto CINGOLANI, Minister of the Ecological Transition, Italy  
Ettore SEQUI, Secretary General, Ministry of Foreign Affairs and International Cooperation, Italy  
Francesco PROFUMO, President of Compagnia di San Paolo  
Massimo MORI, President of Accademia delle Scienze di Torino

### Session 1: *Settled and unsettled aspects of the carbon cycle*

chair: Gregory Stephanopoulos, co-chair: Maria Cristina FACCHINI

9.40 CET (Exeter 8.40)

Philippe CIAIS (Laboratoire des Sciences du Climat et de l'Environnement, CEA Paris-Saclay and Académie de France): *Terrestrial biosphere and carbon cycle*

10.10 Discussion

10.20 Andrew WATSON (University of Exeter and The Royal Society, UK): *The Ocean sink for atmospheric CO<sub>2</sub> - what we know and what we don't*

10.50 Discussion

11.00 Coffee break

### Session 2: *Reconstruction of past climate*

chair: Simona BORDONI, co-chair: Giuseppe OROMBELLI

11.20 Thomas STOCKER (University of Bern and Accademia Nazionale dei Lincei): *Surprises in the climate system: the physical basis*

11.50 Discussion

12.00 Carlo BARBANTE (Istituto di Scienze Polari, CNR and Università Ca' Foscari, Venezia): *Earth's climate, the lesson learnt from the past*

12.30 Discussion

12.40 Lunch

### Session 3: *Changing extremes*

chair: Sami SOLANKI, co-chair: Andrea RINALDO

14.00 CET (Cambridge 8.00)

Anthony DAVISON (École Polytechnique Fédérale de Lausanne): *Statistical uncertainty and extreme climate events*

14.30 Discussion

14.40 Kerry EMANUEL (MIT, Cambridge, Massachusetts, and National Academy of Sciences, USA): *Effects of climate change on hurricanes, medicanes and severe thunderstorms*

15.10 Discussion

15.20 Simona BORDONI (Università di Trento): *Regional precipitation changes with warming*

15.50 Discussion

16.00 Coffee break

### Session 4: *Governance of climate change*

chair: Guido SARACCO, co-chair: Ignazio MUSU

16.20 CET (New York 10.20; Cambridge 15.20)

Gernot WAGNER (New York University): *Pricing climate risk and uncertainty*

16.50 Discussion

17.00 Partha DASGUPTA (University of Cambridge and The Royal Society, UK): *Biodiversity loss and climate change*

17.30 Discussion

17.40 Bruno CARLI (CNR-IFAC, Firenze and Accademia Nazionale dei Lincei): *Space borne observations for informed choices*

18.10 Discussion

September 10, 2021

**Session 5: The future of Venice**  
**chair: Michele CAPUTO, co-chair: Claudio CARERE**

- 9.00 CET (Canberra 17.00)  
Kurt LAMBECK (Australian National University, Canberra and Australian Academy of Sciences): *Perspectives on sea level rise*
- 9.30 Discussion
- 9.40 Andrea RINALDO (École Polytechnique Fédérale de Lausanne and Accademia Nazionale dei Lincei): *Venice as a template for the discourse on built vs natural environments facing responses to sea level rise*
- 10.10 Discussion
- 10.20 Ignazio MUSU (Università Ca' Foscari, Venezia and Accademia Nazionale dei Lincei): *The impact of climate change on sustainable development of integrated socio-economic-cultural-ecological urban systems: the emblematic case of Venice*
- 10.50 Discussion
- 11.00 Coffee break

**Session 6: Natural and anthropogenic**  
**chair: Kerry EMANUEL, co-chair: Francesco BERRILLI**

- 11.20 CET (Oxford 10.20)  
Timothy PALMER (Oxford University and Accademia Nazionale dei Lincei): *Climate predictability*
- 11.50 Discussion
- 12.00 Sami SOLANKI (Max Planck Institute for Solar System Research, Göttingen): *Does the Sun contribute to global warming?*
- 12.30 Discussion
- 12.40 Lunch

**Session 7: Climate change and biodiversity**  
**chair: Paola BONFANTE, co-chair: Enrico ALLEVA**

- 14.00 CET (Princeton 8.00)  
Simon A. LEVIN (Princeton University and National Academy of Sciences, USA): *An ecologist view of climate change*
- 14.30 Discussion
- 14.40 Yvon LE MAHO (CNRS, Université de Strasbourg and Académie des Sciences): *To which extent wild animals can cope with extreme climate changes*
- 15.10 Discussion
- 15.20 Coffee break

**Session 8: Energy and climate change**  
**chair: Thomas STOCKER, co-chair: Giovanni SEMINARA**

- 15.40 CET (Turku 16.40; Cambridge 9.40)  
Roundtable  
Sergio CARRÀ (Politecnico di Milano and Accademia Nazionale dei Lincei): *Introductory remarks*  
Alberto CLÒ (Università di Bologna and former Italian Minister): *Energy and climate, the other side of the coin*  
Ron ZEVENHOVEN (Åbo Akademi University, Turku): *Research perspectives: capture, storage and utilization technologies*  
Gregory STEPHANOPOULOS (MIT, Cambridge and National Academy of Engineering USA): *Can biotechnology deliver cost effective fuels for transportation with reduced carbon footprint*
- 17.00 Discussion

**Closing Session. Chair: Giorgio PARISI**

- 17.20 Giovanni SEMINARA (Accademia Nazionale dei Lincei): Presentation and approval of the final document
- 17.40 Bruno Carli (CNR-IFAC, Firenze and Accademia Nazionale dei Lincei): Closure of the meeting

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ROME – PALAZZO CORSINI - VIA DELLA LUNGARA, 10

Secretary of the Conference: [convegni@lincei.it](mailto:convegni@lincei.it)

All information to participate in the conference sessions is available at:  
<https://www.lincei.it/it/manifestazioni/current-issues-climate-research-conference>