

## **Session report: Insight from session A**

**Day and time: 2023-09-28, 11.00-12:30**

**Chairs: Daniela Jacob and Silvina Solman**

**Rapporteurs: Barış Kelebek and Christian Stassen**

### **Summary for the Insight from Session A**

The Insight from session A was a plenary discussion carried out to summarize the community efforts around the emerging new techniques for downscaling based on a variety of approaches, including Earth System regional climate models, convection permitting climate models and new ESD techniques.

#### **Top Highlights**

1. Each region exhibits distinct physical processes and feedback mechanisms, necessitating discussions on component selection for RESMs.
2. In addition to dynamical downscaling, ESD techniques and AI model integration are highly beneficial in enhancing simulation reliability for impact studies.
3. Multinational collaboration and new coordination strategies are needed to address the computational challenges of high-resolution simulations, improve knowledge transferability, and ensure computational sustainability.
4. Assessing multi-model uncertainty in GCMs and RCMs is essential, raising questions about data value and the need for replication through increased simulations from different CMIPs.