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Prospects for the APPLICATE Project on advanced prediction in the Arctic and beyond

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The effects of a changing climate are manifesting rapidly, particularly in the Arctic region, and these changes are potentially influencing weather and climate in the mid-latitudes. To understand the scope of these changes and their impacts, it is fundamental to have a better understanding of these processes and work on enhancing weather and climate predictions. It is with this motivation that a European consortium of scientists set out to advance our capability to predict the weather and climate in the Arctic and beyond in the framework of the EU-funded H2020 project APPLICATE. The project started in 2016 with a budget of 8M€ with the objective of improving the representation of key processes in coupled atmosphere-sea ice-ocean models, delivering enhanced numerical weather forecasts, seasonal to interannual climate predictions and centennial climate projections. The project put particular emphasis on the linkages between the Arctic and mid-latitudes, which are explored through a coordinated multi-model approach using coupled atmosphere-ocean models. APPLICATE is contributing to the design of the future Arctic observing system to improve our capacity to reanalyse the climate system and enhance models' predicting skills, establishing collaborations with other programmes (e.g., within the EU-Polar Cluster). The project has also strong stakeholder engagement and training components, which see the dissemination of the scientific results as a priority and aim to enhance the communication scope of the project and add to knowledge co-production.

In this presentation, we will give an overview of APPLICATE activities as part of our effort to understand changes in the Arctic and their far-reaching impacts for both environment and communities. We will summarise the main achievements of the project since the start in November 2016 and outline the work of the various task teams until the end of the project. The results achieved so far demonstrate a vibrant engagement of young researchers in the field of climate science and the important role the project plays in developing these scientists.

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