

Project Kick Off

EU Horizon 2020 Project APPLICATE kicks off

Studying Arctic's Connections to Weather and Climate in Europe, Asia and North America

[14. November 2016] An EU-financed project investigating ways to improve weather and climate prediction in the face of a rapidly changing Arctic officially started this month. Known as APPLICATE (Advanced Prediction in Polar regions and beyond: modelling, observing system design and Linkages associated with a Changing Arctic climaTE), the €8 million project, financed by the EU HORIZON 2020 Research and Innovation programme, involves 16 partners from nine countries (Belgium, France, Germany, Iceland, Norway, Russia, Spain, Sweden and the United Kingdom) and will be carried out over a period of four years.

The multinational and multidisciplinary consortium will work to enhance weather and climate prediction capabilities not only in the Arctic, but also in Europe, Asia, and North America. A focus on the Arctic is important for improved predictions of weather and climate in the mid-latitudes because the changes taking place in the Arctic due to climate change—the retreat of sea ice, warming seas and a warming atmosphere—have the potential to influence weather and climate in the mid-latitudes. According to several studies (the most recent of which was published in Nature Climate Change in October 2016), a warming Arctic can, in fact, lead to prolonged periods of severe weather and cold spells in the mid-latitudes.



Group of researchers at work on the ice (Photo: Alfred-Wegener-Institut / Stefan Hendricks)

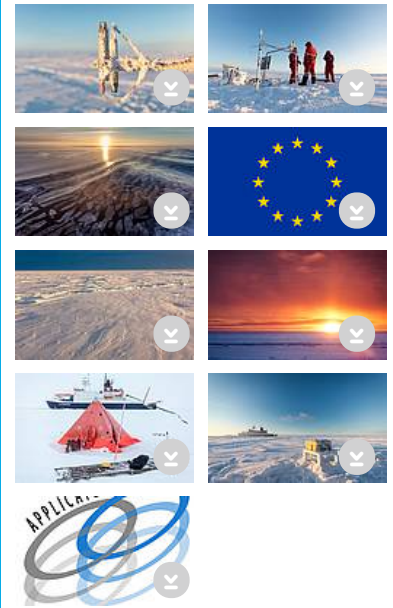
The impacts of severe weather on commerce and infrastructure can be significant, so having adequate tools to predict when and how severe weather systems will affect Europe, Asia and North America is vital to inhabitants of these regions. The APPLICATE project is bringing together an international team of experts in weather and climate prediction to improve climate and weather forecasting models to work on improving prediction tools while expanding and improving observational capabilities in the Arctic.

"In the Arctic, today's prediction systems suffer from a lack of observations, model shortcomings and deficits in effectively combining models with observations," according to APPLICATE Project Coordinator Prof Thomas Jung, climate scientist at the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, the lead partner in the project. "Our aim is to design a future Arctic observing system that enhances our predictive capacity. Additionally, the representation of critical processes in models will be improved and new ways of assimilating observations into models will be explored."

The APPLICATE project also involves a strong education, training and outreach component in order to train the next generation of experts and raise awareness about the benefits of improved climate and weather forecasting. Members of the APPLICATE consortium will engage with stakeholders who use weather and climate forecasts to obtain constructive feedback, allowing the models and forecasts to be constantly improved and updated, taking into account user needs. Early career scientists in climate-related fields will have the opportunity to participate in a summer school and webinar lectures, while the general public will be able to learn about the project thanks to specially-produced informational videos and publications.




Consortium members plan to work closely with other EU-financed projects and researchers outside of Europe working on similar topics in order to maximise synergies and productivity.

Downloads






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The Institute

The Alfred Wegener Institute pursues research in the polar regions and the oceans of mid and high latitudes. As one of the 18 centres of the Helmholtz Association it

A website for the APPLICATE project offering regular news and information about the initiative is set to be launched in the coming months.

The APPLICATE project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727862.

coordinates polar research in Germany and provides ships like the research icebreaker Polarstern and stations for the international scientific community.

The 16 partners in the APPLICATE consortium:

- Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) - Bremerhaven, Germany
- Barcelona Supercomputing Center - Barcelona, Spain
- European Centre for Medium-Range Weather Forecasts (ECMWF) - Reading, United Kingdom
- University of Bergen (UiB) - Bergen, Norway
- Uni Research AS - Bergen, Norway
- Norwegian Meteorological Institute (MET Norway) - Oslo, Norway
- UK MET Office - Exeter, United Kingdom
- Catholic University of Louvain (UCL) - Louvain-la-Neuve, Belgium
- The University of Reading (UREAD) - Reading, United Kingdom
- Stockholm University (SU) - Stockholm, Sweden
- National Centre for Scientific Research (CNRS-GAME) - Paris, France (with contributions from Météo France)
- European Centre for Research and Advanced Training in Scientific Calculation (CERFACS) - Toulouse, France
- Arctic Portal - Akureyri, Iceland
- University of Tromsø (UiT) - Tromsø, Norway
- P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences (IORAS) - Moscow, Russia
- Federal State Budgetary Institution Voeikov Main Geophysical Observatory (MGO) - St. Petersburg, Russia