Antonio Parodi

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Education and training

1998

PhD in Hydraulic Engineering and Environmental Systems Modelling

Numerical modelling of turbulent convection from Rayleigh-Benard to a radiative convective atmosphere

University of Padua - Padua - IT

1993

Master Degree in Environmental Engineering

Tempeste mediterranee Modelli di regionalizzazione e strutture delle precipitazioni estreme - 110/110 e lode

University of Genoa - Genoa - IT

Academic experience

1999 - 2007

Researcher

CIMA - Savona - IT

2007 - 2014

Project leader

CIMA - Savona (Italy) - IT

Language skills

English

Research interests

Antonio Parodi (male), PhD, Program Director at CIMA Research Foundation. Master
Degree in Environmental Engineering, University of Genova, Italy (1998).
Research Scholar
at MIT - EAPS, (2002). Member of Radar Science Group at JPL-NASA (2009).
His research
interests are related to the development of simplified models of dry and
moist convection and
to the study of the main sources of uncertainty in the high-resolution

numerical modelling of
deep moist convective processes. He is author and co-author of 52 publications on
international peer-reviewed journals. Project director of the FP7 projects DRIHMS
(www.drihms.eu), DRIHM (www.drihm.eu), DRIHM2US (www.drihm2us.eu), ESA
STEAM project.

Grants

2011 - 2015
DRIHM (Distributed Research Infrastructure for Hydro-Meteorology)
Commissione Europea - IT
3.5 Meuro - Pricipal investigator

DRIHM

The DRIHM project (Distributed Research Infrastructure for Hydro-Meteorology), conducted from September 2011 to March 2015, obtained the first applied results to the study of risk-oriented hydrometeorology, thanks to a European high performance-computing platform. Immediately after the start of the project, in October 2011, a massive flood happened on the Liguria coast, which represented an important case study for CIMA Research Foundation researchers; in fact, it was possible to identify in that case study some characteristics that could help an early warning alert in case of future similar events.
DRIHM is a European-oriented research platform with cutting edge equipment and calculation. For that reason the main goal of the project was to generate high definition detail models that can now be used by the Civil Protection Department and ARPA Liguria to forecast extreme events and anticipate the alert.
In addition to the CIMA Research Foundation, the Ludwig Maximilians Universitaet in Munich (Germany) and the Institute of Applied Mathematics and Computer Technologies of CNR in Genoa, other institutions contributed to the DRIHM project: the Technical University of Madrid (Spain), the Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique in France, the Republicki Hidrometeoroloski Zavodsrbije (RHMSS) in Serbia, the Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI) in the USA, the Stichting Deltares in The Netherlands and the HR Wallingford in Great Britain.

2012 - 2015
DRIHM2US (Distributed Research Infrastructure for Hydro-Meteorology to United States of America)
Commissione Europea - IT
0.5 Meuro - Pricipal investigator

Following the DRIHMS project success and together with the launch of the DRIHM project, in October 2012 the project DRIHM2US (Distributed Research Infrastructure for Hydro-Meteorology to United States of America) was activated. DRIHM2US aimed to expand the European Technology Network in the USA in order to promote scientific collaboration on hydro meteorological research topics on both sides of the Atlantic Ocean.
The ultimate goal was to implement complex models through applied researches for predicting extreme events and understanding whether they were related to climate change. The USA has top-notch centralized calculation resources, and has always been at the forefront of hydro meteorological issues. By promoting the cooperation between scientific communities, DRIM2US has increased the usage of USA computing resources by European researchers, which were able to share results, data and models studied with USA colleagues.

2009 - 2010
DRIHMS (Distribution Research Infrastructure for Hydro-Meteorology Study)
Commissione Europea - IT
0.25 Meuro - Principal investigator
DRIHMS (Distribution Research Infrastructure for Hydro-Meteorology Study) project was the first European project conducted by CIMA Research Foundation in the meteorological filed. The project was active from September 2009 to March 2011, with the collaboration of the Ludwig Maximilians Universitaet of Munich in Germany and the Institute of Applied Mathematics and Computer Technologies of CNR in Genoa.
DRIHMS succeeded in creating a network within the hydro meteorological scientific community to increase the collaboration between different organizations using IT platforms in several European countries. The concept of networking the excellence of European research and its competitiveness in the field of hydrometeorology laid the basis for the upcoming DRIHM and DRIHM2US projects.
Over the years, thanks to DRIHM, DRIHMS and DRIHM2US, CIMA Research Foundation has gained access to important IT tools, such as the one in Munich, which at that time was the fourth in the world. These IT tools are essential to apply precise calculations required for feeding the complex models in use. Today, thanks to the European platform activated by the DRIHM project,high-resolution spatial and temporal probabilistic multi-models are in use.

2017 - ONGOING
STEAM (SaTellite Earth observation for Atmospheric Modeling)
ESA - IT
0.3 Meuro - Pricipal investigator
The violence and frequency of extreme weather events is increasing. For this reason, improving the forecast accuracy is a fundamental goal to limit social and economic damages. In this scenario the STEAM project (SaTellite

Earth observation for Atmospheric Modeling) aims to respond to a specific question asked by the European Space Agency (ESA): can be used satellite weather observation data to better understand and predict with at higher spatial-temporal resolution the atmospheric phenomena that can lead to extreme events?

To verify this, STEAM has identified the 'WRF model' as the best existing model and will feed it also with other variables observed by satellites of the Sentinel constellation such as humidity, soil and sea temperature, wind on the sea, the amount of water vapour in the atmospheric band closest to the earth. All these data are not normally used in atmospheric forecasting models, but they are taken into account more for hydrological and marine modelling. Many experiments will be carried out on leading edge cloud computing facilities both for the analysis of high impact meteorological events and for the study of turbulence phenomena of the lower atmosphere and the spatial inhomogeneity of the water vapour fields. These phenomena influence also the electromagnetic propagation earth-satellite and in this subject ESA has a natural interest.