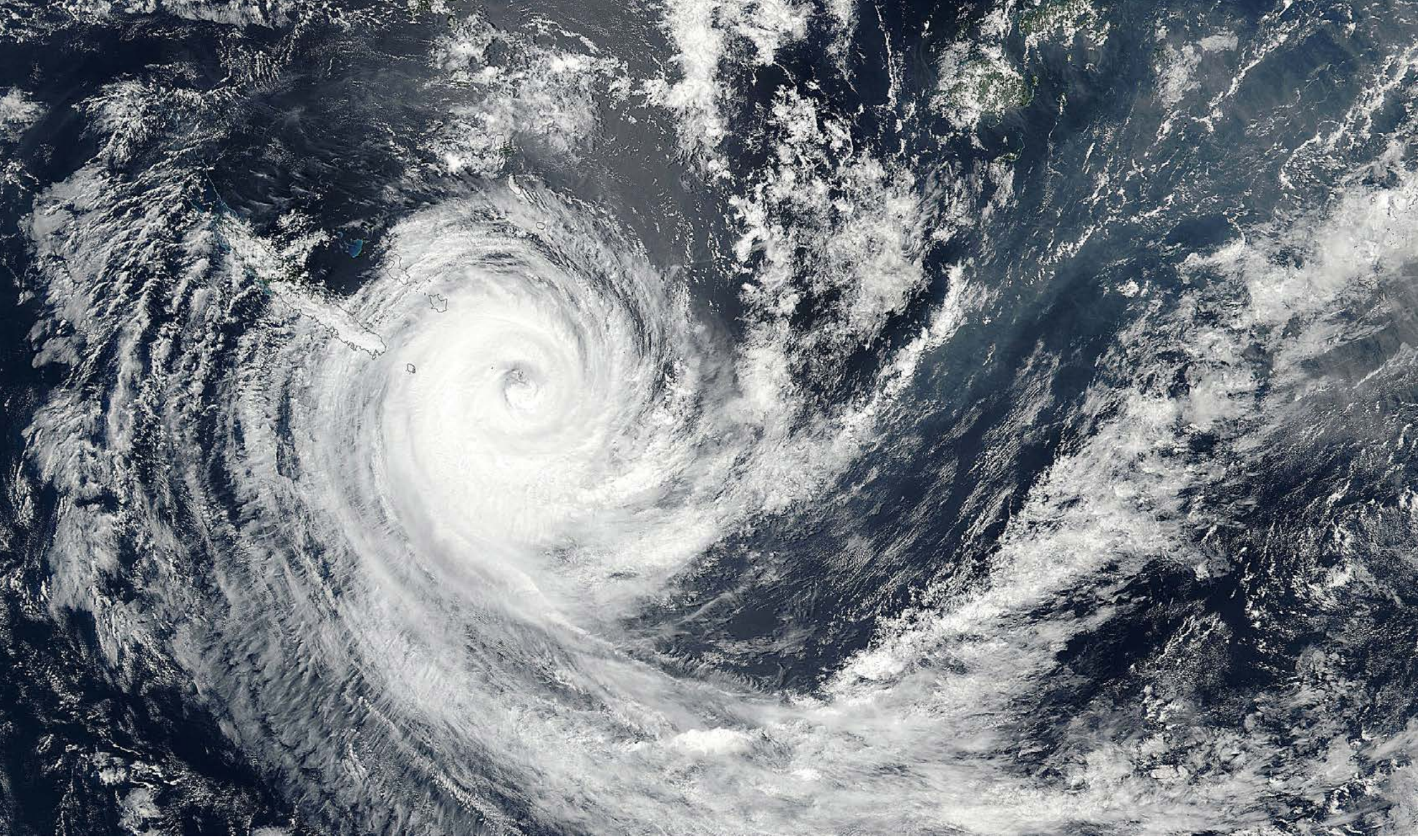

5 LUGLIO 2018
ore 15.30

Sala Azzurra
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Elaborazione a cura del Servizio Comunicazione e Relazioni Esterne | SNS

CLIMATE PREDICTABILITY, STOCHASTIC MODELLING AND INEXACT COMPUTING
Seminario

TIM PALMER | Oxford University

Introduce
VINCENZO BARONE, Scuola Normale Superiore

Over the last quarter century weather prediction has evolved from a largely deterministic procedure based on single best-guess forecasts, to a probabilistic one based on ensembles of predictions. By representing stochastically, the underlying deterministic partial differential equations, weather predictions are now (perhaps paradoxically) more accurate and reliable. As part of this evolution, our comprehensive climate models are also evolving from deterministic to stochastic finite representations of the underlying equations. As a result of this move towards explicit stochasticity, we are beginning to ask what is the inherent information content in the hundreds of billions of bits that represent a weather and climate model. By only retaining the bits that represent real information, the algorithmic efficiency of code can be improved substantially. This is likely to be extremely important as we move towards very high resolution models running on exascale supercomputers.

Tim Palmer is a Royal Society Research Professor in the Physics Department at the University of Oxford. For many years he worked at the European Centre for Medium-Range Weather Forecasts where he led the teams developing ensemble weather prediction and seasonal climate prediction. Tim has won the top prizes of the European and American Meteorological Societies and the Dirac Gold Medal for theoretical and computational physics of the Institute of Physics. He is a Fellow of numerous learned societies, including the Royal Society, and the Accademia dei Lincei. His PhD was in general relativity theory under Dennis Sciama, and he retains an active research interest in the foundations of quantum physics and the synthesis of quantum and gravitational physics.

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