



DSSC

Data Science & Systems Complexity

SEMINAR

You are cordially invited to the DSSC seminar on
5 Nov 2020, 16.00-17.00, [BlueJeans](#)
PhD and master's students are welcome!

The El - Niño Phenomenon: Complexity and Predictability

Speaker: Prof. Dr. Henk Dijkstra

Dept. of Physics, Utrecht University

<https://webpace.science.uu.nl/~dijks101/>



The El Niño variability in the equatorial Tropical Pacific is characterized by sea surface temperature anomalies and associated changes in the atmospheric circulation. Through an enormous observational effort over the last decades, the relevant time scales and spatial patterns of El Niño are now well-documented. In the meantime, a hierarchy of models has been developed to understand the physics of this phenomenon and to make predictions of future El Niño events. In this presentation a complex systems science oriented approach to El Niño will be given with a focus on (i) the robust and relevant details of the observations, (ii) the current state of the theory of the variability and (iii) the limiting factors of (and new approaches to improve) the skill of model forecasts.

Biography

Henk A. Dijkstra is professor of Dynamical Oceanography at the Institute for Marine and Atmospheric research Utrecht (IMAU) within the Department of Physics of Utrecht University. He was trained as an applied mathematician and held positions at the University of Groningen, Cornell University, and Colorado State University. His main research interests are in the application of modern mathematical methods to climate models to understand phenomena of climate variability. Since 2002, he is a full member of the Royal Netherlands Academy of Arts and Sciences (KNAW) and since 2009 he is a Fellow of the Society for Industrial and Applied Mathematics (SIAM). In 2005, he received the Lewis Fry Richardson medal from the European Geosciences Union. He is sole author of the books: *Nonlinear Physical Oceanography* (Springer, 2005), *Dynamical Oceanography* (Springer, 2008), *Nonlinear Climate Dynamics* (Cambridge, 2013) and lead author of the book *Networks in Climate* (Cambridge, 2019).



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