UiO : University of Oslo

Department of Mathematics
Section of Statistics and Biostatistics

Seminar Series in Statistics and Biostatistics

20.11.2018, 14:15 @ Seminar Room 819, Niels Henrik Abels hus, 8th floor

Statistics in climate research: The importance of stochastic modelling and uncertainty quantification

Abstract: High-resolution unbiased information on future climate change is commonly required for local impact assessment and adaptation decision-making. Climate models are our primary source of knowledge about future climate development. However, global and regional climate models are generally biased and their resolution is often lower than desired, resulting in biases in the subsequent impact simulations. Similarly, not all climate variables are included in the climate model simulations. When producing climate projections at fine grid resolutions or individual locations, it is imperative to include stochastic components to model local variability not accounted for by the lower resolution model. This involves developing space-time models that are consistent with observational data over historical periods while also being computationally feasible. In decisions-problems different components of uncertainty need to be propagated through the decision-making framework even if the resulting answer should be given by a single number. We discuss these aspects and show examples of daily mean temperature projections for Norway and sea level adaptation decision-making in Bergen.
Joint work with Qifen Yuan, Wai Kwok Wong, Stein Beldring, Shaochun Huang, Chong-Yu Xu and Peter Guttorp.

Thordis L. Thorarinsdottir

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Thordis L. Thorarinsdottir is a statistician in the Statistical Analysis, Machine Learning, and Image Analysis (SAMBA) group at the Norwegian Computing Center. Her work is within the fields of spatial and space-time statistics, Bayesian methods and forecasting. She works on environmental applications together with atmospheric scientists and hydrologists to solve problems on uncertainty quantification, probabilistic prediction and model evaluation.

Next seminar

30.11.2018 @ 10:15 **Tore S. Kleppe** (Stavanger)
30.11.2018 @ 11:15 **Christopher Nemeth** (UK)

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