



Seminar Series in Statistics and Biostatistics

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

On developing general and efficient inference algorithms for complicated hierarchical models

Abstract: A common problem in spatial statistics consists of estimating the marginal distribution of a phenomena at any location within a region. The (usually two or three) parameters of the marginal distribution are then assumed to depend on a set of covariates and, potentially, a spatially structured random effect. In addition, it is often of interest to incorporate a model averaging component to assess model uncertainty in the effect of the proposed covariates. We discuss how inference for such models can be performed in a Bayesian setting in a general and an efficient manner without the need for user-specified tuning parameters in the Bayesian inference algorithm. This is demonstrated in two applications where the three-parameter generalized extreme value (GEV) distribution with latent Gaussian fields is used for spatial modelling of extreme short-term precipitation and for regional flood frequency analysis in Norway.

Joint work with Alex Lenkoski, Anita Dyrørdal, Frode Stordal, Gunnhildur Steinbakk, Kristoffer Hellton, Kolbjørn Engeland and Lena Schlichting



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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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