DSS Statistics Seminar
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https://meet.google.com/rht-bzju-gsd

Temporal NNGP for actigraph data

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Rapid developments in spatial streaming data technologies are continuing to generate increased interest in monitoring human activity cycles. Among prevalent non-invasive practices for measuring gross motor activity are sensor units worn on the wrist (actigraphy). An actigraph unit continually records the activity level of an individual, producing a very large amount of data at a high-resolution that can be immediately downloaded and analyzed. While this kind of BIG DATA includes both spatial and temporal information, the variation in such data seems to be more appropriately modeled by considering stochastic evolution through time while accounting for spatial information separately. Our current work develops a comprehensive Bayesian hierarchical modeling and inferential framework for actigraphy data reckoning with the massive sizes of such databases while attempting to offer full inference. More specifically, we construct a temporal NNGP as the particular case of the NNGP for time processes and we focus on the implementation of the collapsed algorithm in this specific context. Some comments on the promising results obtained both on simulated and real data will be given.