

Thursday, October 4th, 16:00-17:00

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SPATIO-TEMPORAL HIERARCHICAL MODELS FOR VECTOR-BORNE DISEASE RISK

This work presents the first comprehensive spatio-temporal analysis that links reported and suspected cases of Dengue fever with weather variables collected at different stations and land use satellite data. Dengue and Zika are mosquito-borne tropical diseases, reported with increasing rates in the last decade. Early warning systems help in predicting outbreaks and allow public health decision-makers to implement preventive measures. Several factors have been linked to the increase in reported cases: changes in temperature, precipitation, urbanization, and other spatial variables. Several space-time CAR specifications are implemented in a Bayesian framework to assess the relative risk of these factors, as well as to set a predictive framework. The modeling strategy involves a two stage approach to account for the different spatial supports of predictors and response, and it allows identification of localized patterns.