Departmental Seminar Series presents:

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Modeling the effect of distance from a hydroelectric dam on time to malaria: distance confounded with the clustering structure

Abstract:

In this talk I will present research output which is mainly motivated by the question whether hydro-electric dams have an impact on malaria incidence or not. The specific problem that arises in the malaria data is the confounding of the clustering (village) with the covariate of interest (distance from the dam). The effect of this confounding problem is investigated in the multivariate survival data. Different types of parametric proportional hazards models are presented and compared. Although, frailty model is often considered to be the standard model for clustered survival data, in the case of the malaria data, parameter estimates from this model are a weighed combination of the within and between village estimate of the distance effect on time to malaria. Such a weighed combination, however, makes only sense if the same relationship holds between and within clusters. This assumption, however, is questionable for the malaria dataset considered in this study. Under such circumstances, where there is confounding between the clustering structure and the covariate of interest, we recommend to use either marginal time to event models with robust standard errors or a frailty model with two orthogonal covariates.

This talk will be accessible to Juniors and Seniors.

Refreshments will be served