Université catholique de Louvain
UCL
SECTEUR DES SCIENCES ET TECHNOLOGIES
INSTITUT DE RECHERCHE MULTIDISCIPLINAIRE
POUR LA MODELISATION ET L'ANALYSE QUANTITATIVE

Invitation à la soutenance publique de thèse

Pour l'obtention du grade de Docteur en Sciences

Monsieur Vincent BREMHORST

Master en statistiques à finalité approfondie

Flexible Bayesian cure survival models with applications in fertility studies

Classical survival analysis assumes that all units under study will later or sooner experience the event-of-interest. However, for some studies, that assumption might not be realistic and lead to an incorrect interpretation of regression coefficients by conflating covariate effects on the possibility to experience the event and the event timing for susceptible subjects.
Starting from the promotion time cure model, one of the model families used to disentangle these effects, a smooth and flexible specification of the baseline distribution enabling to handle non-monotone population hazard function is proposed.
On the other hand, it is usually assumed that continuous covariates contribute linearly to the two regression models involved in the conditional probability of being cured and in the conditional distribution of the event-of-interest for susceptible subjects. This assumption is relaxed using double additive models.
Since some subject characteristics may vary over time, an original extension of the promotion time model to time-dependent covariates is also presented.
These methodological contributions are illustrated through the analysis of West German fertility data with a particular interest in the conditional effects of mother's education and age at first birth on fertility progression.

Mercredi 20 décembre 2017 à 14h00

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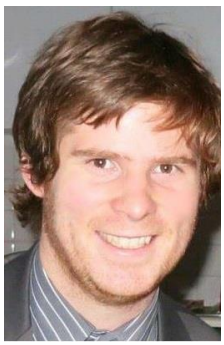

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