UiO : University of Oslo

Department of Mathematics
Section of Statistics and Biostatistics

Seminar Series in Statistics and Biostatistics

25.09.2018, 14:15 @ Seminar Room 819, Niels Henrik Abels hus, 8th floor

Giuliana Cortese: Regression models for the restricted residual mean life for right-censored and left-truncated data

Abstract: Hazard functions are typically studied via Cox's regression survival models. The resulting hazard ratios estimate the relative risks, and these measures are difficult to interpret and hard to be translated into clinical benefits in terms of increased survival time. The main objective is often to study survival functions, aiming at a global summary over a time period. Therefore, there has been increasing interest in summary measures based on the survival function, easier to interpret than the hazard ratio. For the survival time T, we consider the mean residual time $E(Tt|Tt)$, which has recently received increasing interest in literature. This quantity represents a partial area under the survival function and is interpreted as the residual life expectancy of individuals who had survived up to a certain time t. However, due to the presence of right censoring, the tail of the survival distribution is often difficult to be correctly estimated. As a solution, we propose to study the restricted mean residual time $E(min(T,\tau)-t|Tt)$, for any $\tau > 0$. We present regression models for this new measure, based on weighted estimating equations and the inverse probability of censoring weighted estimator to model potential right censoring. We also show how to extend the models to deal with delayed entries. Estimation performance is investigated by simulation studies. Using real data about the Danish Monitoring Cardiovascular Risk Factor Survey, we illustrate an application of these regression models when the link function is identity or exponential.

Giuliana Cortese
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Giuliana Cortese is Associate Professor at the Department of Statistical Sciences of the University of Padova. She received the PhD in Statistics from the University of Padova in 2008. Among other institutions, she worked at the Department of Biostatistics of the University of Copenhagen in 2010-2011 as a Post-Doc .

Her main research interests are integrated and modified likelihoods for censored data, survival analysis, dynamic survival regression models, competing risks models and prediction.

Next seminar

28.09.2018 @ 09:15
Rebecka Jörnsten (Gothenburg/Chalmers)

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