Abstract of PhD Thesis (in Portuguese):

Bayesian Analysis of Survival Models with Frailty

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Abstract

The aim of this thesis is to present a Bayesian analysis for survival models with frailty, especially survival models with an additive framework for the hazard function. Frailty models in survival analysis deal with the unobserved heterogeneity among the individuals in study.

Following an alternative approach in survival analysis, the statistical models here presented are basically survival models based on counting processes. These models are divided into two classes: multiplicative and additive models, aiming to answer to different ways of assessing the influence of heterogeneity among individuals in the hazard function or intensity of the counting processes.

Multiplicative frailty models were initially proposed by Vaupel, Manton and Stallard (1979), while Rocha (1995) suggested additive frailty models. A Bayesian approach of these models is proposed in this text. Simulation methods are used to assess the posterior quantities of interest.

Keywords: Frailty Models; Regression Models; Additive Survival Models; Survival Analysis; Bayesian Inference.