DEPENDENCE EVALUATION FOR MULTILEVEL MODELS IN SURVIVAL DATA

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We consider an experiment undertaken by biologists from the University of São Paulo. The main objective was to map areas of the brain related to spatial memory. Rats were divided in three treatment groups, and were repeatedly evaluated with respect to the time up to completion of a given task. Parametric as well as semi-parametric multilevel models were employed in the statistical analysis, based on mixed generalized linear models with random coefficients normally distributed. In order to evaluate for the dependence implied by the random coefficients, we considered the classical Wald test, a bootstrap testing procedure and a new test developed to take in consideration boundary constraints in the parameter space. Simulated data were also considered in the evaluation.