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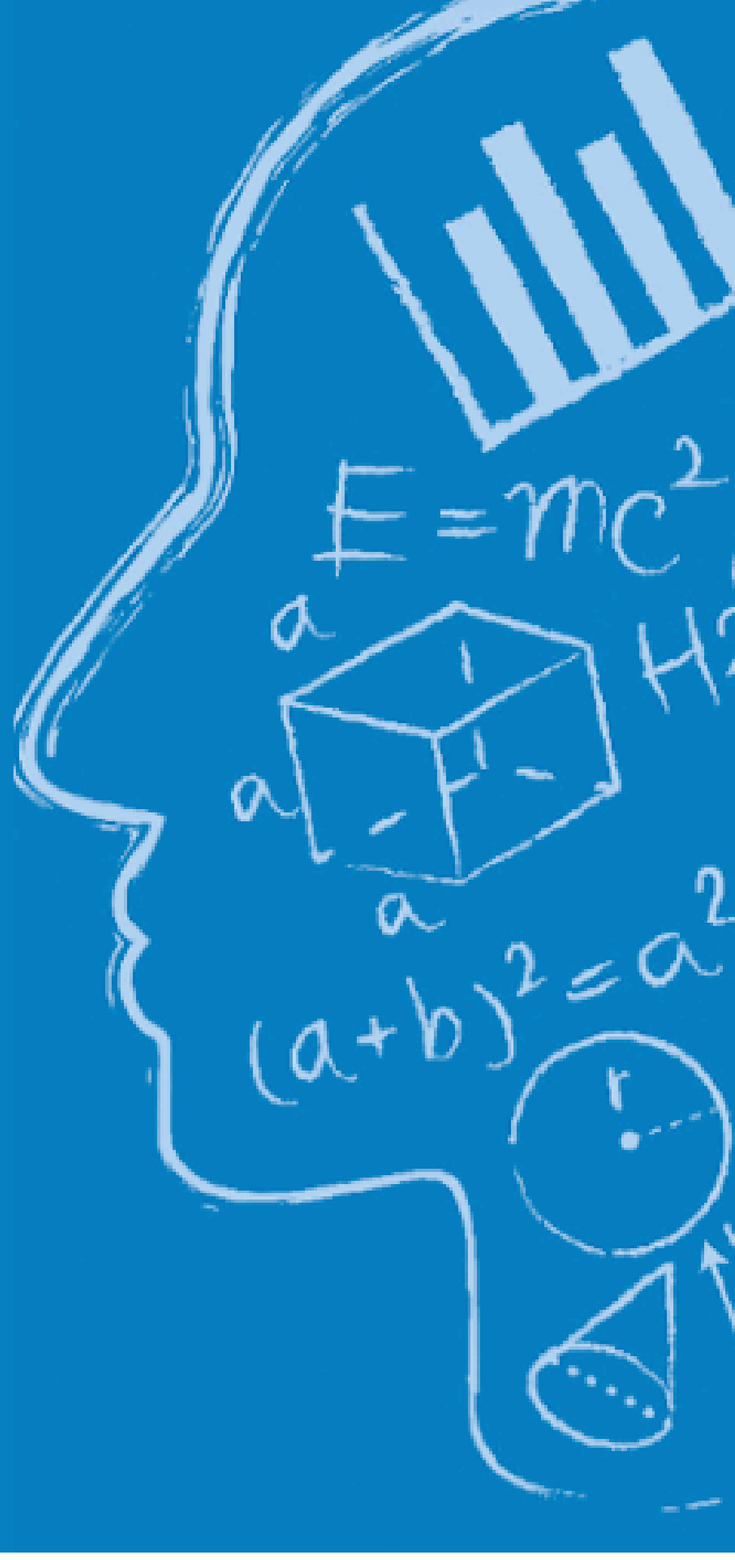

EVALUATING THE LINEARITY OF A COVARIATE IN SHARED-PARAMETER JOINT MODELS

ABSTRACT:

Shared-parameter joint models link longitudinal and time-to-event data, typically assuming that the conditional logarithm of the hazard function is linearly related over time to baseline covariates. However, this assumption is restrictive, making it crucial to test for linearity in key covariates. A useful approach consists of employing nonparametric smoothing techniques to compare the presumed linear shape with an orthogonal series expansion around it. The number of terms in the expansion is selected using a penalty-modified Akaike information criterion (MAIC). A numerical study validates the nonparametric MAIC-based testing procedure within the shared-parameter joint modeling framework, while the practical utility of the procedure is illustrated with a clinical trial of HIV-infected subjects.

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14:30

ZOOM

Centro de Estatística e Aplicações
Universidade de Lisboa

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Xavier Piulachs obtained a Ph.D. in Statistics from the University of Barcelona. He is an assistant professor of Statistics at Polytechnic University of Catalonia, Campus Terrassa (Barcelona). His research primarily focuses on demonstrating innovative applications of joint models for longitudinal and time-to-event data, with particular emphasis on data related to health care and clinical studies.

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