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Improved Estimation of Aalen's Additive Hazards Model

We consider Aalen's additive hazards model for censored data under the assumption that the time-dependent regression coefficients restricted to a prior subspace. If the restriction information is uncertain, then it is unclear whether to employ the restricted or the unrestricted least squared estimators (LSEs). We propose a class of Stein-type estimators of the parameters which combine the restricted and unrestricted LSEs. We show both analytically and by simulations that such estimators have relatively superior performance. We illustrate the proposed methodology by using data from a clinical trial on primary biliary cirrhosis of the liver.