Bayesian analysis of survival data under generalized extreme value distribution with application in cure rate model

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Abstract This paper introduces both maxima and minima generalized extreme value (GEV) distribution to analyze right-censored survival data with a cure fraction. Our proposed GEV model leads to extremely flexible hazard functions. Our proposed Bayesian model achieves proper posterior distribution under some weak conditions when improper priors are used. We further provide theoretical and numerical results showing that our GEV models offer a richer class of models than the widely used Weibull models. Finally, a glioblastoma multiforme cancer data is analyzed to illustrate the proposed GEV model.

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