Accelerated failure time regression for backward recurrence times and current durations

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SUMMARY. Backward recurrence times in stationary renewal processes and current durations in dynamic populations observed at a cross-section may yield estimates of underlying interarrival times or survival distributions under suitable stationarity assumptions. Regression models have been proposed for these situations, but accelerated failure time models have the particularly attractive feature that they are preserved when going from the backward recurrence times to the underlying survival distribution of interest. This simple fact has recently been noticed in a sociological context and is here illustrated by a pilot study of current duration of time to pregnancy.

Keywords: time to pregnancy, Pareto distribution, survival analysis