

## Non-Bayesian two-Sample Prediction for Progressively Type-II Censored Weibull Lifetimes

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**Abstract.** Prediction on the basis of censored data has an important role in many fields. This paper develops a non-Bayesian two-sample prediction based on a progressive Type-II right censoring scheme. The Weibull distribution is considered to obtain the ML predictor (MLp) and the predictive ML estimators of the  $s^{th}$  order statistic in a future random sample ( $y_s$ ) drawn independently from the parent population, for an arbitrary progressive censoring scheme. To reach this aim, we present two ML prediction methods namely the EM algorithm and the approximate ML prediction. We compare the performances of the different methods of ML prediction by Monte Carlo simulation with respect to biases and mean square prediction errors (MSPEs) of the MLPs of  $Y_s$ .

**Keywords.** Approximate maximum likelihood prediction, EM algorithm, Maximum likelihood prediction, Mean square prediction error, Progressive Type-II right censoring scheme, Two-sample prediction.