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A Note on the Three Parameters Weibull Estimation

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Abstract: Maximum likelihood (ML) is the most common method used to estimate the parameters of the three parameter Weibull distribution. However, ML is not applicable to estimate these parameters when the shape parameter (β) is smaller than two. Therefore, in this paper we propose to use ordinary least square (OLS) instead of ML. Since by the standard OLS structure, it is not possible to estimate directly the location Weibull parameter (γ), here we find it by the use of random search by maximizing the multiple regression coefficient function. The application of the proposed method, to sets of data, showed excellent performance.

Keywords: Maximum likelihood, Three-parameter Weibull distribution, Ordinary Least square, Random search.