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Total least squares fitting the three-parameter inverse Weibull Density


**Abstract.** The focus of this paper is on a nonlinear weighted total least squares fitting problem for the three-parameter inverse Weibull density which is frequently employed as a model in reliability and lifetime studies. As a main result, a theorem on the existence of the total least squares estimator is obtained, as well as its generalization in the $l_q$ norm ($1 \leq q < \infty$).