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Optimum constant-stress partially accelerated life test plans with type-II censoring. The case of Weibull failure distribution.

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This paper deals with simple constant-stress Partially Accelerated Life Tests (PALT) with Type-II censoring. It is assumed that the lifetime at design stress has a Weibull distribution. Statistically optimal PALT plans are developed such that the Generalized Asymptotic Variance (GAV) of the Maximum-Likelihood Estimators (MLEs) of the model parameters at design stress is minimized. For illustration, simulation studies are introduced. (orig.)

Classification: K95 K75
Keywords: reliability; partially accelerated life tests; Weibull distribution; constant-stress; maximum likelihood estimation; Fisher information matrix; generalized asymptotic variance; optimum test plans; failure-censoring; Monte Carlo simulation