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# Asymptotic normality of the recursive M-estimators of the scale parameters

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**Abstract** In this paper, the limit distributions of the recursive M-estimators of scatter parameters in a multivariate linear model setting are studied. Under some mild conditions, the asymptotic normality of the recursive M-esimtators is established. Some Monte Carlo simulation results are presented to illustrate the performance of the recursive M-estimators.

**Keywords** M-estimation · Multivariate linear regression model · Recursive algorithm · Robust estimation · Scatter parameter · Diffusion process · Strong consistency · Asymptotic normality