

UNUSUAL LIMIT THEOREMS FOR THE TWO-TAILED PARETO DISTRIBUTION

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Abstract. We examine order statistics from a two-sided Pareto distribution. It turns out that the smallest two order statistics and the largest two order statistics have very unusual limits. We obtain strong and weak exact laws for the smallest and the largest order statistics. For such statistics we also study the generalized law of the iterated logarithm. For the second smallest and second largest order statistics we prove the central limit theorem even though their second moment is infinite.

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