

## ENTROPY FOR PARETO (IV), BURR, AND ITS ORDER //STATISTICS DISTRIBUTIONS

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### Abstract

Main result of this paper is to derive the exact analytical expressions of entropy for Pareto, Burr and related distributions. Entropy for  $k$ th order statistic corresponding to the random sample size  $n$  from these distributions is introduced. These distributions arise as tractable parametric models in reliability, actuarial science, economics, finance and telecommunications. We showed that all the calculations can be obtained from one main dimensional integral whose expression is obtained through some particular change of variables. Indeed, we consider that this calculus technique for that improper integral has its own importance.

*Keywords:* Gamma and Beta functions; Polygamma functions; Entropy; Order Statistics; Pareto, Burr models.

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