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# Estimation and Comparison of Entropy-Based Parameter Estimation for Kappa Distribution over Krishna River Basin

**Amit Singh** and Sagar Chavan
Indian Institute of Technology, Civil Engineering, India (amit.19cez0016@iitrpr.ac.in)

The Kappa distribution is a versatile distribution and results in nine different distributions depending on its parameter values.The study presents an entropy-based method for estimating the parameters of the four parameters kappa distribution. At site data of the annual maximum flood of 30 sites of Krishna river basins are used for the study. The parameters estimated using the principle of maximum entropy (POME), method of moments, L-moments, and method of maximum likelihood is compared using Kolmogorov-Smirnov (K-S) test. The overall performance of the methods POME, MLE and L-moment are found to be comparable, whereas MOM performs with the highest bias; both the entropy method and the L-moment method allows the four-parameter kappa distribution to fit the data well and the combination of the two methods can further improve the parameter estimation of the four-parameter kappa distribution.