



Multivariate Log-CFUSN Distribution: Bayesian inference and properties

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We introduce the multivariate log canonical fundamental skew-normal (log-CFUSN) and discuss some of its properties, such as marginal distributions. This class of log-skewed distributions include the log-normal and multivariate log-skew normal families as particular cases. Some issues related to Bayesian inference in the log-CFUSN family is discussed. We also obtain the Shannon entropy and Kullback-Leibler divergence of the log-CFUSN and relate our results with other well known distributions entropies. This proposed family is used to analyze the US national monthly precipitation data. Shannon entropy is used to compare models and we conclude that a high dimensional skewing function lead to a better model fit. Similar conclusion is drawn using the well-known CPO. Kullback-Leibler divergence is used to cluster regions in Atlantic ocean according to their air humidity level.

Keywords: Entropy; MCMC; model selection; skewness.