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EXTREME ORDER STATISTICS PLOT VERSUS QUANTILE QUANTILE PLOT: NONPARAMETRIC VISUALIZATION FOR A DATA

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ABSTRACT

New plots are proposed based on minimum and maximum order statistics that is visually appealing, easy to understand, stable at extreme tails and capture all information about the distribution of the data. The minimum and maximum plots give more weights to the data at the extreme tails unlike quantile quantile plot. Therefore, it can be considered these plots as a completeness of the quantile quantile plot. The minimum and maximum plots are used to obtain a nonparametric visualization for the Gumbel and Weibull distributions. Moreover, the minimum and maximum normal plots are introduced and compared with quantile quantile plot. The new plots have advantage to be applied to discrete distributions.

KEYWORDS: Extreme Values, Gumbel Distribution, Order Statistics, Q-Q Plot, Weibull Plot

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