

## Distances between models of generalized order statistics

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The Hellinger metric and several divergence measures for multivariate density functions are applied to measure distances between different models of generalized order statistics, such as common order statistics, sequential order statistics, progressively type-II censored order statistics, record values,  $k$ -th record values, and Pfeifer record values. Explicit expressions of divergences and distances are shown along with some properties and structural findings within the family of generalized order statistics. Moreover, the results are statistically utilized to find a closest common order statistics model to some given model of sequential order statistics, to construct multivariate confidence regions for the parameter vector of sequential order statistics as well as to test the null hypothesis of common order statistics against a sequential order statistics alternative.