

On Statistic for a New Test of Discordancy in Circular Data

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Abstract—This presentation looks at two statistics that can be used in developing new tests of discordancy in circular samples from von Mises distribution. We derive the approximate distributions for both statistics. Consequently, an alternative test of discordancy is proposed based on the circular distance between sample points. The advantage of the test is that it allows users to detect any possible outliers in both univariate circular data and circular regression model for bivariate circular data. For illustration, the test is applied on two real circular data sets.

Index Terms—Chord, circular distance, circular regression, outlier, von Mises distribution

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