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Sunil Mathur* (skmathur@olemiss.edu), Hume 325, Department of Mathematics, University of Mississippi, University, MS 38677. *A Generalized Slope Based Scale-Invariant One Sample Nonparametric Test For Bivariate Location Problem.*

A generalized test is proposed for bivariate one sample location problem. The proposed test is based on the slopes obtained by using two variates. The asymptotic distribution of the proposed test statistic is found. The proposed test statistic does not depend on the covariance structure of the population, and is scale-invariant. The proposed test statistic is compared with several test statistics using Monte Carlo technique. For non-normal distributions, the proposed test statistic performs better than most of the test statistics under consideration, some of which are based on two-samples, for almost all the shifts in the location. Application of the test is also illustrated using a bivariate data set. (Received May 28, 2010)