

1125-VW-2914 **Sheida Riahi*** (sr1315@msstate.edu), Department of Mathematics and Statistics, Mississippi State, MS 39762, and **Prakash Patil**. *Measuring and Testing Central Symmetry in Bivariate Settings*. Preliminary report.

A concept of symmetry plays an important role in statistics. For example detection of abnormalities as asymmetrical patterns in the thermographic images is linked to the concept of symmetric regression functions or the null distributions of t and F statistics in the univariate general linear model depend on spherical symmetry of the error distribution. For a multivariate distribution one can define different kinds of symmetry, e.g. central, spherical, elliptical symmetry etc. Our interest here is to study these symmetries in bivariate set-up with the intention of measuring (quantifying) and testing for different kinds of asymmetries. For that here as a first step we extend the recently proposed quantification of asymmetry and tests for symmetry in Partlett and Patil (2015) to the central symmetry in bivariate settings. (Received September 20, 2016)