1077-VE-293 **Jianfeng Zhang** (jianfeng.zhang@chattanoogastate.edu), 4103 Dayton Blvd Apt D78, Chattanooga, TN 37415, **David Olive** (dolive@math.siu.edu), Department of Mathematics, 4408, Southern Illinois Univeristy, 1245 Lincoln Drive, Carbondale, IL 62901, and **Ping Ye*** (yepi@quincy.edu), 3010 Fox Run W, Quincy, IL 62301. *A Robust Dispersion Estimator and its Applications.*

Robust estimators for multivariate location and dispersion should be $\sqrt{n}$ consistent and highly outlier resistant, but estimators that have been shown to have these properties are impractical to compute. The RMVN estimator is an easily computed outlier resistant robust $\sqrt{n}$ consistent estimator of multivariate location and dispersion, and the estimator is obtained by scaling the classical estimator applied to the RMVN subset that contains at least half of the cases. Several robust estimators will be presented, discussed and compared in detail. The applications for the RMVN estimator are numerous, and a simple method for performing robust principal component analysis (PCA), canonical correlation analysis (CCA) and factor analysis is to apply the classical method to the RMVN subset. Two approaches for robust PCA and CCA will be introduced and compared by simulation studies. (Received August 25, 2011)