

This work describes one of the basic problems of robust statistics concerning outlier detection and its possible solution by using the Minimum covariance determinant estimator for estimates of the mean value and the covariance matrix with multivariate data. It explains how the estimator works and analyses its properties. The work concentrates on its approximation based on the fastMCD algorithm and specifies its numerical properties with emphasis on computational costs and stability of the standard implementation in MATLAB. It also discusses possible modifications of the algorithm and its effects on numerical properties. Lastly the work shows the usage of the fastMCD algorithm on a few real data experiments.