

Multidimensional image data are usually reduced during preprocessing to lower high computational requirements and to cope with the well-known small sample size problem in the huge data analysis. Two reduction methods based on principal component analysis (PCA) are compared and further modified here to be used in classification of 3-D MRI brain images of first-episode schizophrenia patients and healthy controls. The first reduction method is the two-dimensional principal component analysis (2DPCA) and the second one is the PCA based on covariance matrix of persons (pPCA). The classification efficiency of data reduced by 2DPCA and pPCA are compared while using various input image data and two classification methods – the centroid method and the average linkage method.