CLASSIFICATION OF GALAXY CLUSTERS. ALGORITHMS FOR APPLYING NUMERICAL CRITERIA

E.A. Panko

Theoretical Physics and Astronomy Department,
I. I. Mechnikov Odessa National University, Odessa, Ukraine
panko.elena@gmail.com

For detail studying of galaxy clusters taking into account numerical criteria we developed algorithms for detecting various kinds of regular substructures in this objects. The input data (the Catalogue of Galaxy Clusters and Groups, E. Panko & P. Flin, 2006, and list of galaxies of Münster Red Sky Survey, R. Ungruhe, W. C. Seitter, and H. W. Duerbeck, 2003) allow to create the 2D map with positions of galaxies in the cluster field and show for each cluster member it's shape and orientation as best-fit ellipse. Our algorithms allow the detect the standard cases, such as the degree of concentration to the cluster center as well as the degree of concentration to the straight axe. We also developed the algorithm for detection some other features, such as a crosses, a semi-crosses, and complex crosses. The numerical criteria for the significance of detecting the substructures are applied for all cases.

The results of detail morphological classification are used for study of evolution of galaxy clusters.