

Summary in English

Investigation of the Luminosity Function of galaxy clusters

The main purpose of the work is a determination of the Luminosity Function of galaxy clusters. The Luminosity Function of galaxies or radiogalaxies has been determined many times, however the problem of determining the luminosity function for the clusters themselves has not been popular among researchers and has not yet been solved. One of the main reasons for this was the lack of adequate observational material suitable for analyzing the problem. In this Thesis we rely on the catalog of Galaxy Clusters Panko & Flin (2006) which is the first to provide the data necessary for a proper analysis of our problem. Our study has shown that the brightness function for galaxy clusters is significantly different from that obtained for optical galaxies and for radio galaxies. The dependence of luminosity function on morphological types has also been investigated. The obtained results have been compared with the dependence of the ordering of the rotation axes of galaxies on the morphological types of clusters. The significance of the obtained results for testing the theory of galaxy rise and their structures has been discussed.