

## STUDY ENVIRONMENTAL DEPENDENCE OF GALAXY PROPERTIES

S. N. Dodonov and A. A. Grokhovskaya

*Special Astrophysical Observatory, Nizhnij Arkhyz, Russia*

*E-mail: dodo@sao.ru, grohovskaya.a@gmail.com*

We study the clustering of galaxies as function of redshift in the range  $0. < z < 0.8$  using data from observations on 1-m Schmidt Telescope of Byurakan Astrophysical Observatory (Armenia) in 16 medium band (FWHM  $\sim 250 \text{ \AA}$ ) and 5 broad band (SDSS u,g,r,i,z) filters. The data used in this work homogeneously cover 2.23 sq. deg with accurate photometric redshifts  $\sigma z = 0.005(1 + z)$  for all types of galaxies and  $\sigma z = 0.002(1 + z)$  for early type galaxies, down to  $R_{AB} < 23$ . We reconstructed three-dimensional large scale distribution using early type galaxies as born structural elements and build density distribution for all galaxies. We select groups and clusters of galaxies with adaptive kernel as density peaks above twice of the mean density and with Voronoi tessellation as density peaks above twice the mean density in each redshift with more than of eight same connected cells. The reconstructed overdensity field of the galaxies consists of cluster-like patterns surrounded by void-like regions, extending up to  $z \sim 0.8$ . Some of these structures are very large, spanning the  $\sim 50h^{-1}$  Mpc transverse direction of the field and extending up to  $\Delta z \sim 0.05$  in redshift. We begin to study the dependence of star formation properties and morphology on the environments of the galaxies in this field. Results of this investigation and comparison with results from COSMOS and ALHAMBRA surveys are presented in this report.