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## Presence of dual structure in galaxy clusters from CfA2 Redshift Survey which reveal high-energy $\gamma$ -associations on Fermi/LAT 12-Year Point Source Catalog 4FGL DR3.

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Preliminary results of the investigation of the properties of 13 clusters of galaxies from CfA2 redshift survey are discussed in the presented article. The distributions on absolute magnitude and luminosity represent two areas for clusters #88, 1101, 1046, 142, 933, 1242, 1652, 107, 150, 316, 317, 961, 977. Redshifts of these clusters are in the region 0.002 – 0.032. Also several anomalies of spatial dynamic of galaxies in these clusters were separated. Clusters #933, #142, #1046, #1652 and #316 reveal high-energy  $\gamma$ -associations on Fermi/LAT 12-Year Point Source Catalog 4FGL-DR3 (4FGL J1144.9+1937, 4FGL J0152.2+3714, 4FGL J1230.8+1223, 4FGL J1653.8+3945 and 4FGL J0708.9+4839). Moreover, sources 4FGLJ1144.9+1937 and 4FGLJ1230.8+1223 observed in subTeV energy band by VERITAS data. Then we have investigate these systems dynamic using Nonlinear Time Series Analysis. We have construct phase space for such clusters of galaxies using values of redshift, coordinates, magnitude, absolute magnitude and distance to centre. As timelike variable we supposed the ratio between galaxies tangential velocity and its distance to cluster's centre. Accordingly to preliminary results of analysis we have obtained two attractors in the phase space of cluster #88 and ones with presence of high-energy gamma-emission with basins corresponds to bifurcation points on the analyzable distributions. Such results concludes real dual structure of systems being studied. The presence of such structure allows conclude two alternatives. In the first one dark matter presence inside cluster or its the nearest neighbourhood in configuration similar to Zeldovich pancake. Second case is gravitational lensing on compact object or dark matter blob located between galaxy cluster and observer. Joint observations of such clusters by orbital gamma-ray observatories with high angular resolution and ground-based Cherenkov air-shower experiments could possibly clarify the type of influence to groups characteristics (gravitational lensing or object inside cluster) and processes of particle acceleration in these objects especially highest energy of emitted gammas. Thus we propose including these clusters and similar objects in the programs of observations of the planned experiment GAMMA-400 (Gamma Astronomical Multifunctional Modular Apparatus) with angular resolution  $\sim 0.01^\circ$  at  $E_\gamma = 100$  GeV and upper energy band boundary about several TeV. Also now the coordination of multiwavelength observations program of Cherenkov Telescope Array (CTA) and GAMMA-400 is discussed.

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