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AN ATTEMPT TO EXPLAIN THE EVOLUTION OF LYMAN-ALPHA BLOBS NUMBER DENSITY AT Z 1-6

M. SMAILAGIĆ

Department of Astronomy, Faculty of Mathematics, Studentski trg 16, 11000 Belgrade, Serbia
E–mail: marijana@aob.rs

Abstract. Lyman-alpha blobs (LABs), very luminous ($\sim 10^{43} - 10^{44}$ erg/s) and very extended ($\sim 50 - 150$ kpc) radio quiet sources, are discovered 10-15 years ago, and observed in redshift range from 1 to 6.6. The source of their energy is still not clear. In this work we model the evolution in comoving number density of LABs as a function of redshift. Our model is based on empirical recipes for the cold mode accretion derived from cosmological hydrodynamical simulations. We assume that the cooling radiation (CR) from the cold mode accretion in intergalactic gas is the main source of LAB emission and we "paint on" empirical recipes on the numerical merger tree for dark matter halos in the post-analysis of high-res cosmological dark matter only simulation. In this way, we can calculate the Lyman-alpha luminosity expected in every dark matter halo at every redshift, and predict the theoretical luminosity and area functions of LABs at various redshifts. In this work we compared predicted luminosity functions and number densities to the observed ones for some parameters and at various redshifts, and we concluded.