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A comparison of properties of different population radio galaxies based on the Planck mission microwave data

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Abstract

© 2016, Pleiades Publishing, Ltd.Applying the stacking method, we examine the areas of the cosmic microwave background radiation (CMB) maps, constructed according to the Planck SpaceObservatory data in the neighbourhood of different populations of radio sources and giant elliptical galaxies. The samples of objects include giant radio galaxies (GRG), radio sources, selected by the radio-spectral index and redshift, as well as the gamma-ray bursts, used as a secondary comparative sample. We have studied the topological properties of the CMB signal in the neighbourhood of the average object of the population, namely, we searched for the presence of the maxima and minima in the average area. The difference of the signal in the neighbourhood of GRGs from the other types of objects was discovered.

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Keywords

data analysis, galaxies—gamma-ray burst, general—cosmic background radiation— methods, radio continuum