Cosmic ray contribution in extragalactic gamma-ray emission at an energy 0.1 TeV

We estimate the intensity of gamma-quanta at an energy of 0.1 TeV that is generated in extragalactic space in interaction of ultra-high energy cosmic rays with cosmic background emission. Energy of 0.1 TeV is chosen because the Universe is mostly transparent for these quanta. In the paper three types of cosmic ray sources are analyzed: objects with red shifts up to *z*=1.1 having monoenergetic particle spectra, *E*=1021 eV; the same objects with exponential particle spectra; objects with red shifts 0<*z*≤0.0092 i.e. located at distances less than ~50 Mpc, also with exponential particle spectra. It is obtained that cosmic ray contribution in extragalactic background emission at 0.1 TeV ranges from *f*<<10-4 to *f* ≈0.1 depending on source characteristics. Thus the cosmic ray contribution in extragalactic background emission can be used for studying cosmic ray sources.