

Extragalactic Radio Background from Synchrotron Emission of Radio and Normal Galaxies

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The extragalactic radio background in the universe is mainly due to emission from the radio galaxies and normal galaxies. This emission is synchrotron radiation by relativistic electrons gyrating in the magnetic field of the galaxies. Synchrotron self-absorption and free-free absorptions by hot ionised gas in the interstellar medium play an important role to modify radio emission. In this study, we calculate the radio spectra of the radio and normal galaxies. Thereafter, we develop a model for the intensity of extragalactic radio background by using the resulting radio spectra and by integrating over the observed luminosity functions according to cosmological evolution. We compare our model with the latest radio source count data.

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