

Synchrotron Radiation and Inverse Compton Scattering in Astrophysical Plasma

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Abstract : The aim of this project is to study the radiation mechanism synchrotron and Inverse Compton scattering. Theoretically, we discussed spectral energy distribution for both. Programming is done for plotting the graph of Power-law spectrum for synchrotron Radiation using fortran90. The importance of power law spectrum was discussed and studied to infer its physical parameters from the model fitting. We also discussed how to infer the physical parameters from the theoretically drawn graph, we have seen how one can infer B (magnetic field of the source), γ min, γ max, spectral indices (p_1 , p_2) while fitting the curve to the observed data.

Keywords : blazars/quasars, beaming, synchrotron radiation, Synchrotron Self Compton, inverse Compton scattering, mrk421

Conference Title : ICHEA 2015 : International Conference on High Energy Astrophysics

Conference Location : Osaka, Japan

Conference Dates : October 08-09, 2015