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Spectral Energy Distributions and X-ray Variability of the Blazar PKS 2155-304 PAUL WIITA, The College of New Jersey, JAI BHAGWAN, ARIES and Ravishankar Shukla U, India, ALOK GUPTA, Aryabhatta Research Institute for Observational Sciences, India, IOSSIF PAPADAKIS, IESL Foundation for Research and Technology, Greece — PKS 2155-304 is a BL Lac object that is variable across the entire EM spectrum and is the brightest object in UV to gamma-ray bands in the southern hemisphere. It is a high synchrotron peak blazar and is frequently observed by the XMM-Newton satellite in the X-ray, UV and optical. We present spectral energy distributions (SEDs) resulting from 20 pointings of XMM-Newton. We focused on the changes in the synchrotron peak with optical/UV and X-ray flux variations and also analyzed the X-ray spectral variations in more detail for 1 pointing. We modeled the observed SEDs of PKS 2155-304 from the optical to X-ray bands using a synchrotron self-Compton model in which electron energies have log-parabolic distributions. In our analysis, we found a significant anti-correlation between the spectral slope parameter, a, and the peak frequency. All SEDs are fitted well with log-parabolic curves and we considered how each model parameter would change the SED curve. We did not find any significant correlation of magnetic field intensity, electron density, and the bulk Lorentz factor with the peak frequency. One observation analyzed in more detail showed a significant anti-correlation between the X-ray spectral slope and the flux, indicating some X-rays arise from inverse Compton scattering.

Paul Wiita
The College of New Jersey

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