# SPECTRUM OF A MAGNETIZED ACCRETION DISK AGN MODEL

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**Abstract.** Using the magnetized accretion disk AGN model of Field and Rogers (1993, ApJ, 403, 94), the spectral emission from far infrared to $\gamma$-ray is calculated. The resulting spectrum closely resembles that of Seyfert 1 galaxies. The effect of optically thin dust above the accretion disk is investigated.

**Key words:** AGN, spectrum

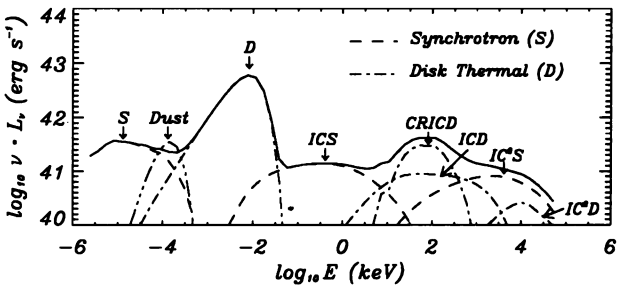


Fig. 1. The $\nu L_\nu$ plot of the radially integrated spectrum. A far-infrared cutoff exists just below $10^{-6}$ keV due to synchrotron self-absorption. A UV-bump and a large $\gamma$-ray tail are present. Here, IC represents Inverse-Compton emission, $IC^2$ represents second order IC emission, and CR represents a Compton Reflected component.

In the model of Field and Rogers (1993), gravitational energy released by gas spiraling inward in the accretion process is converted to magnetic energy and radiated away. Loops in the corona form due to magnetic buoyancy. Reconnection occurs and it accelerates particles to relativistic energies. The radially integrated spectrum is shown in figure 1.

The dust emission from an optically thin ($\tau = 0.1$) layer of dust suspended above the accretion disk exceeds emission from thermal and synchrotron spectra near 10 $\mu m$ (figure 1). Optically thick dust in the torus contributes significantly to the infrared emission. Thus the predicted 10% variability in the infrared can be greatly reduced by dust. The sharp cutoff in dust spectrum at high temperature almost always produces an infrared minimum at a few $\mu m$.

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