

- **ezdiskbb: multiple blackbody disk model with zero-torque inner boundary**

A multi-temperature blackbody model for a thin, steady-state, Newtonian accretion disk, assuming zero torque at the inner boundary for the disk at radius R_{in} . The temperature of the disk as a function of radius is assumed to be $T(r) = T_* r^{-3/4} (1 - r^{-1/2})^{1/4}$, where $r = R/R_{\text{in}}$ and $T_* = f(3 G M \dot{M} / 8 \pi R_{\text{in}}^3 \sigma)^{1/4}$. The maximum temperature in the disk is given by $T_{\text{max}} = 0.488 T_*$.

This model is an alternative to diskbb, which assumes a non-zero torque at the inner edge and a temperature profile $T(r) = T_* r^{-3/4}$, and it should be used to fit spectra of disks when the zero-torque inner boundary condition is appropriate. For details see Zimmerman et al. (2004) astro-ph/0408209.

par1 = maximum temperature in the disk (keV)
 par2 = $(1/f^4) (R_{\text{in}}/D)^2 \cos i$, where R_{in} is the inner radius of the disk in km, D is the distance to the source in units of 10 kpc, i is the inclination, and f is the color to effective temperature ratio.