

bexriv: reflected e-folded broken power law, ionized medium

Broken power-law spectrum multiplied by exponential high-energy cutoff, $\exp(-E_c E)$, and reflected from ionized material. See Magdziarz & Zdziarski 1995, MNRAS, 273, 837 for details. Ionization and opacities of the reflecting medium is computed as in the absori model. The output spectrum is the sum of an e-folded broken power law and the reflection component. The reflection component alone can be obtained for $|rel_{\text{refl}}| < 0$. Then the actual reflection normalization is $|rel_{\text{refl}}| < 0$. Note that you need to change then the limits of $|rel_{\text{refl}}| < 0$ excluding zero (as then the direct component appears). If $E_c = 0$, there is no cutoff in the power law. The metal and iron abundances are variable with respect to those set by the command **abund**.

The core of this model is a Greens' function integration with one numerical integral performed for each model energy. The numerical integration is done using an adaptive method which continues until a given estimated fractional precision is reached. The precision can be changed by setting IREFLECT_PRECISION eg xset IREFLECT_PRECISION 0.05. The default precision is 0.01 (ie 1%).

par1	Γ_1 , first power law photon index
par2	E_{break} , break energy (keV)
par3	Γ_2 , second power law photon index
par4	E_c , the e-folding energy in keV (if $E_c = 0$ there is no cutoff)
par5	rel_{refl} , reflection scaling factor (1 for isotropic source above disk)
par6	redshift, z
par7	abundance of elements heavier than He relative to the solar abundances
par8	iron abundance relative to the above
par9	cosine of inclination angle
par10	disk temperature, K
par11	disk ionization parameter, $\xi = \frac{4\pi F_{\text{ion}}}{n}$, where F_{ion} is the 5eV–20 keV irradiating flux, n is the density of the reflector; see Done et al., 1992, ApJ, 395, 275}
norm	photon flux at 1 keV of the cutoff broken power-law only (no reflection) in the observed frame.}

