

## bknpower: broken power law

A broken power law.

$$A(E) = \begin{cases} KE^{-\Gamma_1} & E \leq E_{\text{break}} \\ KE_{\text{break}}^{\Gamma_2 - \Gamma_1} (E/1\text{keV})^{-\Gamma_2} & E \geq E_{\text{break}} \end{cases}$$

where:

par1 = $\Gamma_1$	power law photon index for $E < E_{\text{break}}$
par2 = $E_{\text{break}}$	break point for the energy in keV
par3 = $\Gamma_2$	power law photon index for $E > E_{\text{break}}$
norm = K	photons $\text{keV}^{-1} \text{cm}^{-2} \text{s}^{-1}$ at 1 keV}

If POW\_EMIN and POW\_EMAX have been defined by the **xset** command then the norm becomes the flux in units of  $10^{-12} \text{ ergs cm}^{-2} \text{ s}^{-1}$  over the energy range (POW\_EMIN, POW\_EMAX) keV unless POW\_EMIN = POW\_EMAX in which case the norm becomes the flux density in micro-Jansky at POW\_EMIN keV. In these cases it is important that POW\_EMIN and POW\_EMAX lie within the energy range on which the model is being evaluated.