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 AHELP for CIAO 3.4

## xsbextriv

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## Synopsis

E–folded broken power law reflected from ionized matter. XSpec model.

## Description

Broken power law spectrum multiplied by exponential high–energy cutoff,  $\text{Exp}[-E/\text{foldE}]$ , and reflected from ionized material. See Magdziarz and Zdziarski 1995, MNRAS, 273, 837 for details. Ionization and opacities of the reflecting medium is computed as in the procedure `absori`. 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  $\text{relRefl} < 0$ . Then the actual reflection normalization is  $|\text{relRefl}|$ . Note that you need to change then the limits of `relRefl` excluding zero (as then the direct component appears). If `foldE = 0`, there is no cutoff in the power law.

The metal and iron abundances are variable with respect to those set by the command `xspecabundan`.

### xsbextriv Parameters

Number	Name	Description
1	Gamma1	first power law photon index
2	breakE	break energy (keV)
3	Gamma2	second power law photon index
4	foldE	the e–folding energy in keV (if <code>foldE=0</code> , there is no cutoff)
5	relRefl	reflection scaling factor (1 for isotropic source above disk)
6	redshift	redshift, $z$
7	abund	abundance of elements heavier than He relative to the solar abundances
8	FeAbund	iron abundance relative to the above
9	cosIncl	cosine of inclination angle
10	Tdisk	disk temperature in K
11	xi	disk ionization parameter, $\xi = 4 \pi F_{\text{ion}}/n$ , where $F_{\text{ion}}$ is the 5 eV – 20 keV irradiating flux, $n$ is the density of the reflector; see Done et al., 1992, ApJ, 395, 275
12	norm	

		photon flux at 1 keV of the cutoff broken power law only (no reflection) in the observed frame.
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This information is taken from the [XSpec User's Guide](#). Version 11.3.1 of the XSpec models is supplied with CIAO 3.2.

## Bugs

For a list of known bugs and issues with the XSPEC models, please visit the [XSPEC bugs page](#).

## See Also

### *sherpa*

[atten](#), [bbody](#), [bbodyfreq](#), [beta1d](#), [beta2d](#), [box1d](#), [box2d](#), [bpl1d](#), [const1d](#), [const2d](#), [cos](#), [delta1d](#), [delta2d](#), [dered](#), [devaucouleurs](#), [edge](#), [erf](#), [erfc](#), [farf](#), [farf2d](#), [fpsf](#), [fpsf1d](#), [frmf](#), [gauss1d](#), [gauss2d](#), [gridmodel](#), [hubble](#), [jdpileup](#), [linebroad](#), [lorentz1d](#), [lorentz2d](#), [models](#), [nbeta](#), [ngauss1d](#), [poisson](#), [polynom1d](#), [polynom2d](#), [powlaw1d](#), [ptsrc1d](#), [ptsrc2d](#), [rsp](#), [rsp2d](#), [schechter](#), [shexp](#), [shexp10](#), [shlog10](#), [shloge](#), [sin](#), [sqrt](#), [steph1d](#), [steplo1d](#), [tan](#), [tpsf](#), [tpsf1d](#), [usermodel](#), [xs](#), [xsabsori](#), [xsacisabs](#), [xsapec](#), [xsbapec](#), [xsbbody](#), [xsbbodyrad](#), [xsbextrav](#), [xsbknpower](#), [xsbmc](#), [xsbremss](#), [xsbvapec](#), [xsc6mekl](#), [xsc6pmekl](#), [xsc6pvmkl](#), [xsc6vmekl](#), [xscabs](#), [xscemekl](#), [xscvmkl](#), [xscflow](#), [xscmpbb](#), [xscmpls](#), [xscmpst](#), [xscmptt](#), [xsconstant](#), [xscutoffpl](#), [xscyclabs](#), [xsdisk](#), [xsdiskbb](#), [xsdiskline](#), [xsdiskm](#), [xsdisko](#), [xsdiskpn](#), [xsdust](#), [xsedge](#), [xsequil](#), [xsexpabs](#), [xsexpdec](#), [xsexpfac](#), [xsgabs](#), [xsgaussian](#), [xsgnei](#), [xsgrad](#), [xsgrbm](#), [xshighecut](#), [xshrefl](#), [xslaor](#), [xslorentz](#), [xsmeka](#), [xsmekal](#), [xsmkcfow](#), [xsnei](#), [xsnotch](#), [xsnpshock](#), [xsnsa](#), [xsnteea](#), [xspcfabs](#), [xspgppwrlw](#), [xspextrav](#), [xspextriv](#), [xspfabs](#), [xsplabs](#), [xspicabs](#), [xsposm](#), [xspowerlaw](#), [xspshock](#), [xspwab](#), [xstraymond](#), [xsredder](#), [xsredge](#), [xsrefsch](#), [xssedov](#), [xssmedge](#), [xsspline](#), [xssrcut](#), [xssresc](#), [xssssice](#), [xsstep](#), [xstbabs](#), [xstbgrain](#), [xstbvarabs](#), [xsuvred](#), [xsvapec](#), [xsvarabs](#), [xsvbremss](#), [xsvequil](#), [xsvgnei](#), [xsvmcfow](#), [xsvmeka](#), [xsvmekal](#), [xsvnei](#), [xsvnpshock](#), [xsvphabs](#), [xsvpshock](#), [xsvraymond](#), [xsvsedov](#), [xswabs](#), [xswndabs](#), [xsxion](#), [xszbbody](#), [xszbremss](#), [xszedge](#), [xszgauss](#), [xszhighect](#), [xszpcfabs](#), [xszphabs](#), [xszpowerlw](#), [xsztbabs](#), [xszvarabs](#), [xszvfeabs](#), [xszvphabs](#), [xszwabs](#), [xszwndabs](#)

### *slang*

[usermodel](#)

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<http://cxc.harvard.edu/ciao3.4/xsbextriv.html>  
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