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 AHELP for CIAO 3.4

## xsrefsch

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## Synopsis

E-folded power law reflected from an ionized relativistic disk. XSpec model.

## Description

Exponentially cutoff power law spectrum reflected from an ionized relativistic accretion disk. In this model, spectrum of 'xspexriv' is convolved with a relativistic disk line profile ('xsdiskline'). See Magdziarz and Zdziarski 1995 MNRAS, 273, 837 for details of Compton reflection and Fabian et al. 1989, MNRAS, 238, 729 for details of the disk line profile.

### xsrefsch Parameters

Number	Name	Description
1	PhoIndex	power law photon index, N_E prop. to $E^{(-\text{PhoIndex})}$
2	foldE	the cutoff energy in keV (if foldE=0 there is no cutoff)
3	relRefl	reflection scaling factor (1 for isotropic source above disk)
4	redshift	redshift, z
5	abund	abundance of elements heavier than He relative to the solar abundances
6	FeAbund	iron abundance relative to the above
7	Incl	inclination angle (degrees)
8	Tdisk	disk temperature in K
9	xi	disk ionization parameter, $\xi = 4 \pi F_{\text{ion}}/n$ , where $F_{\text{ion}}$ is the 5 eV – 20 keV irradiating flux and n is the density of the reflector; see Done et al., 1992, ApJ, 395, 275
10	Betor10	power law index for reflection emissivity; emissivity is proportional to $r^{\text{Betor10}}$
11	Rin	inner disk radius (GM/c <sup>2</sup> )
12	Rout	outer disk radius (GM/c <sup>2</sup> )
13	accuracy	internal model accuracy – points of spectrum per energy decade
14	norm	photon flux at 1 keV of the cutoff broken power law only (no reflection) in the observed frame

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](#), [xsbexrav](#), [xsbexriv](#), [xsbknpower](#), [xsbmc](#), [xsbremss](#), [xsbvapec](#), [xsc6mekl](#), [xsc6pmekl](#), [xsc6pvmkl](#), [xsc6vmekl](#), [xscabs](#), [xscemekl](#), [xscevmecl](#), [xscflow](#), [xscompbb](#), [xscompls](#), [xscompst](#), [xscomptt](#), [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](#), [xsmkcflow](#), [xsnei](#), [xsnotch](#), [xsnphock](#), [xsnsa](#), [xsnteea](#), [xspcfabs](#), [xspgpwrlw](#), [xspexrav](#), [xspexriv](#), [xsphabs](#), [xsplabs](#), [xsplcabs](#), [xspesm](#), [xspowerlaw](#), [xspshock](#), [xspwab](#), [xstraymond](#), [xsredden](#), [xsredge](#), [xsredov](#), [xssmedge](#), [xsspline](#), [xssrcut](#), [xssresc](#), [xssssice](#), [xsstep](#), [xstbabs](#), [xstbgrain](#), [xstbvarabs](#), [xsuvred](#), [xsvapec](#), [xsvarabs](#), [xsvbremss](#), [xsvequil](#), [xsvgnei](#), [xsvmeflow](#), [xsvmeka](#), [xsvmekal](#), [xsvnei](#), [xsvnpshock](#), [xsvphabs](#), [xsvphock](#), [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/xsrefsch.html>  
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