



AHELP for CIAO 3.4

xsgrad

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Synopsis

GR accretion disk around a black hole. XSpec model.

Description

General Relativistic Accretion Disk model around a Schwarzschild black hole. Inner radius is fixed to be 3 Schwarzschild radii, and the energy conversion efficiency is 0.057. See Hanawa, T., 1989, ApJ, 341, 948 and Ebisawa, K. Mitsuda, K. and Hanawa, T. 1991, ApJ, 367, 213.

xsgrad Parameters

Number	Name	Description
1	D	distance (kpc)
2	i	disk inclination angle (degrees); 0 for face-on
3	Mass	mass of the central object (solar units)
4	Mdot	mass accretion rate (1e18 g/s)
5	Tclef	spectral hardening factor, Tcol/Teff. Should be greater than 1.0, and considered to be 1.5–1.9 for accretion disks around a stellar-mass black hole. See, e.g. Shimura and Takahara, 1995, ApJ, 445, 780
6	norm	normalization factor; should be fixed to 1.

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](#),

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jdpileup, linebroad, lorentz1d, lorentz2d, models, nbeta, ngauss1d, poisson, polynom1d, polynom2d, powlaw1d, ptsrc1d, ptsrc2d, rsp, rsp2d, schechter, shexp, shexp10, shlog10, shloge, sin, sqrt, stephi1d, steplo1d, tan, tpsf, tpsf1d, usermodel, xs, xsabsori, xsacisabs, xsapec, xsbapec, xsbody, xsbodyrad, xsboxrav, xsboxriv, xsbnkpower, xsbsmc, xsbremss, xsbvapec, xsc6mekl, xsc6pmecl, xsc6pvmkl, xsc6vmekl, xscabs, xscemekl, xscevmkl, xscflow, xscmpbb, xscmpls, xscmpst, xscmppt, xscconstant, xscutoffpl, xscyclabs, xsdisk, xsdiskbb, xsdiskline, xsdiskm, xsdisko, xsdiskpn, xsdust, xsedg, xsequil, xsexpabs, xsexpdec, xsexpfac, xsgabs, xsgaussian, xsgnei, xsgrbm, xshighcut, xshrefl, xslaor, xslorentz, xsmeka, xsmekal, xsmkcflo, xsnei, xsnotch, xsnpshock, xsnsa, xsnteea, xspcfabs, xspgprlw, xspexrav, xspexriv, xspfabs, xsplabs, xsplcabs, xspesm, xspowerlaw, xspshock, xspwab, xrraymond, xсреdden, xсredg, xсrefsch, xssedov, xssmedg, xsspline, xssrcut, xssresc, xssssice, xssstep, xstbabs, xstbgrain, xstbvarabs, xсuvred, xsvapec, xsvarabs, xsvbremss, xсvequil, xsvgnei, xsvmcflo, xsvmeka, xsvmekal, xsvnei, xsvnpshock, xsvphabs, xsvpshock, xsvraymond, xsvsedov, xswabs, xswndabs, xsxion, xszbbody, xszbremss, xszedg, xszgauss, xszhighcut, xszpcfabs, xszphabs, xszpowerlw, xsztbabs, xszvarabs, xszvfeabs, xszvphabs, xszwabs, xszwndabs

slang

usermodel

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URL:
<http://cxc.harvard.edu/ciao3.4/xsgrad.html>
Last modified: December 2006