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 AHELP for CIAO 3.4

## xsmeka

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## Synopsis

Mewe–Gronenschild–Kaastra thermal plasma (1992). XSpec model.

## Description

An emission spectrum from hot diffuse gas based on the model calculations of Mewe and Gronenschild (as amended by Kaastra). The model includes line emissions from several elements.

### xsmeka Parameters

Number	Name	Description
1	kT	plasma temperature in keV
2	nH	hydrogen density in $\text{cm}^{-3}$
3	Abund	metal abundances (He fixed at cosmic). The elements included are C, N, O, Ne, Na, Mg, Al, Si, S, Ar, Ca, Fe, Ni. Abundances are set by the xspecabundan command.
4	Redshift	redshift, z
5	norm	$10^{-14} / (4 \pi (D_A(1+z))^2) \int n_e n_H dV$ , where $D_A$ is the angular size distance to the source (cm), $n_e$ is the electron density ( $\text{cm}^{-3}$ ), and $n_H$ is the hydrogen density ( $\text{cm}^{-3}$ )

The references for this model are:

- Mewe, R., Gronenschild, E.H.B.M., and van den Oord, G.H.J. 1985, A&AS, 62, 197
- Mewe, R., Lemen, J.R., and van den Oord, G.H.J. 1986, A&AS, 65, 511
- Kaastra, J.S. 1992, An X-Ray Spectral Code for Optically Thin Plasmas (Internal SRON–Leiden Report, updated version 2.0)

Similar credit may also be given for the adopted ionization balance:

- Arnaud, M., and Rothenflug, M. 1985, A&AS, 60, 425
- Arnaud, M., and Raymond, J, 1992, ApJ, 398, 394

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](#), [xscevmdl](#), [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](#), [xsmekal](#), [xsmkcfLOW](#), [xsnei](#), [xsnotch](#), [xsnpshock](#), [xsnsa](#), [xsnteea](#), [xspcfabs](#), [xspgpwrlw](#), [xspexrav](#), [xspexriv](#), [xspfabs](#), [xsplabs](#), [xspcabs](#), [xsposm](#), [xspowerlaw](#), [xspshock](#), [xspwab](#), [xstraymond](#), [xsredden](#), [xsredge](#), [xsrefsch](#), [xssedov](#), [xssmedge](#), [xsspline](#), [xssrcut](#), [xssresc](#), [xssssice](#), [xsstep](#), [xstbabs](#), [xstbgrain](#), [xstbvarabs](#), [xsuvred](#), [xsvapec](#), [xsvvarabs](#), [xsvbremss](#), [xsvequil](#), [xsvgnei](#), [xsvmcfLOW](#), [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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URL:  
<http://cxc.harvard.edu/ciao3.4/xsmeka.html>  
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