AHELP for CIAO 3.4   **dered**   Context: sherpa

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Synopsis

Dereddening function. Integration OFF.

Description

This dereddening model uses the analytic formula for the mean extension law described in Cardelli, Clayton, & Mathis 1989, ApJ 345, 245:

```
A(lambda) = E(B-V) (aR_v+b) = 1.086 tau(lambda)
```

where tau(lambda) is the wavelength–dependent optical depth,

```
I(lambda) = I(0) exp[-tau(lambda)] ,
```

and a and b are computed using wavelength–dependent formulae which we will not reproduce here, for the wavelength range 1000 A – 3.3 microns. The relationship between the color excess and the column density is

```
E(B-V) = [ N_(Hgal) (10^20 cm^-2) ]/58.0
```

(Bohlin, Savage, & Drake 1978, ApJ 224, 132). The value of the ratio of total to selective extinction, R_v, is initially set to 3.1, the standard value for the diffuse ISM. The final model form is:

```
I(lambda) = I(0) exp[-N_(Hgal)(aR_v+b)/58.0/1.086]
```

This model should only be used as a multiplicative model:

```
sherpa> powlaw1d[con1](1.,2588.6,0.1)
sherpa> dered[dr](3.1,0.1)
sherpa> source 1 = con1*dr
```

This model provided courtesy of Karl Forster.

DERED Parameters

Number	Name	Description
1	rv	total to selective extinction ratio R_v
2	nhgal	absorbing column density N(H_gal)

See "ahelp integrate" for further information about source model integration.

Bugs

See the Sherpa bug pages online for an up–to–date listing of known bugs.

See Also

sherpa

atten, bbody, bbodyfreq, beta1d, beta2d, box1d, box2d, bpl1d, const1d, const2d, cos, delta1d, delta2d, 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, stephi1d, steplo1d, tan, tpsf, tpsf1d, usermodel, xs, xsabsori, xsacisabs, xsapec, xsbapec, xsbbody, xsbbodyrad, xsbexrav, xsbexriv, xsbknpower, xsbmc, xsbremss, xsbvapec, xsc6mekl, xsc6pmekl, xsc6pvmkl, xsc6vmekl, xscabs, xscemekl, xscevmkl, 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, xsnpshock, xsnsa, xsnteea, xspcfabs, xspegpwrlw, xspexrav, xspexriv, xsphabs, xsplabs, xsplcabs, xsposm, xspowerlaw, xspshock, xspwab, xsraymond, xsredden, xsredge, xsrefsch, xssedov, xssmedge, xsspline, xssrcut, xssresc, xssssice, xsstep, xstbabs, xstbgrain, xstbvarabs, xsuvred, xsvapec, xsvarabs, xsvbremss, xsvequil, xsvgnei, xsvmcflow, 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

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