

- **wabs, zwabs: photoelectric absorption, Wisconsin cross-sections**

A photo-electric absorption using Wisconsin (Morrison and McCammon; ApJ 270, 119) cross-sections.

$$M(E) = \exp[-n_H \sigma(E)]$$

where $\sigma(E)$ is the photo-electric cross-section (NOT including Thomson scattering). Note that this model uses the Anders & Ebihara relative abundances (1982, Geochimica et Cosmochimica Acta 46, 2363) regardless of the **abund** command.

par1= n_H equivalent hydrogen column (in units of 10^{22} atoms cm^{-2})

The **zwabs** variant allows the user to specify a (fixed) redshift parameter, and uses the corresponding formula

$$M(E) = \exp[-n_H \sigma(E[1+z])]$$

par1= n_H equivalent hydrogen column (in units of 10^{22} atoms cm^{-2})

par2= z redshift