

nei, vnei: collisional plasma, non-equilibrium, constant temperature

Non-equilibrium ionization collisional plasma model. This assumes a constant temperature and single ionization parameter. It provides a characterization of the spectrum but is not a physical model. The references for this model can be found under the description of the equil model. The references for this model can be found under the description of the equil model. Several versions are available. To switch between them use the **xset neivers** command. **xset neivers 1.0** gives the version from xspec v11.1, **xset neivers 1.1** uses updated calculations of ionization fractions using dielectronic recombination rates from Mazzotta et al (1988), and **xset neivers 2.0** uses the same ionization fractions as 1.1 but uses APED to calculate the resulting spectrum. Note that versions 1.x have no emission from Ar. The default is version 1.1.

The **vnei** variant allows the user to set the abundance vector.

For the **nei** version the parameters are

par1	plasma temperature (keV)
par2	Metal abundances (He fixed at cosmic). The elements included are C, N, O, Ne, Mg, Si, S, Ar, Ca, Fe, Ni. Relative abundances are defined by the abund command.
par3	Ionization timescale in units of s cm^{-3} .
par4	redshift z
norm	$\frac{10^{-14}}{4\pi [D_A(1+z)]^2} \int n_e n_H dV$ where D_A is the angular diameter distance to the source (cm), and n_e , n_H (cm^{-3}) are the electron and hydrogen densities respectively.

For the **vnei** variant the parameters are:

par1	plasma temperature (keV)
par2	H density in cm^{-3}
par3-par14	Abundances for He, C, N, O, Ne, Mg, Si, S, Ar, Ca, Fe, Ni wrt Solar (defined by the abund command)
par15	Ionization timescale in units of s cm^{-3} .

par16

redshift z

norm

$$\frac{10^{-14}}{4\pi[D_A(1+z)]^2} \int n_e n_H dV$$

where D_A is the angular diameter distance to the source (cm) , and n_e , n_H (cm^{-3}) are the electron and hydrogen densities respectively.