

c6mekl, c6vmekl, c6pmekl, c6pvmkl: differential emission measure using Chebyshev representations with multi-temperature mekal

c6mekl is a multi-temperature mekal model using sixth-order Chebyshev polynomial for the differential emission measure. The DEM is not constrained to be positive.. The switch parameter determines whether the mekal code will be run to calculate the model spectrum for each temperature or whether the model spectrum will be interpolated from a pre-calculated table. The former is slower but more accurate. The reference for this model is Singh *et al.* (1996, ApJ, 456, 766).

c6pmekl differs by using the exponential of the 6th order Chebyshev polynomial

c6mekl and **c6pmekl** use abundances relative to the Solar abundances set by the **abund** command

The variants **c6vmekl** and **c6pvmkl** with polynomial and exponential polynomial respectively allow the user to specify 14 elemental abundance.

For **c6mekl** and **c6pmekl** the parameters are:

par1-6	Chebyshev polynomial coefficients
par7	H density (cm ⁻³)
par8	abundance wrt to Solar
par9	Redshift
	0 \Rightarrow calculate
par10	1 \Rightarrow interpolate
	2 \Rightarrow interpolate using APEC model
norm	Normalization

While for **c6vmekl** and **c6pvmkl** the parameters are:

par1-6	Chebyshev polynomial coefficients
par7	H density (cm ⁻³)
par8-21	Abundances of He, C, N, O, Ne, Na, Mg, Al, Si, S, Ar, Ca, Fe, Ni wrt Solar (defined by the abund command)
par22	Redshift
par23	0 \Rightarrow calculate

1 \Rightarrow interpolate

2 \Rightarrow interpolate using APEC model

norm Normalization