

fits SUMMARY

ELV: (Also KGR and MWT)

$$\oplus N_e(r) = N_0 \exp \left[-\frac{h}{\lambda_N} \frac{R_0}{r} \right]$$

Changing: $\left[\begin{array}{l} r \rightarrow r/R_0 \\ h \rightarrow h/R_0 = h-1 \\ \lambda_N \rightarrow \lambda_N/R_0 \\ N_0 \rightarrow N_0/1.68 \text{ cm}^3 \end{array} \right]$

$$\Rightarrow N_e(r) = N_0 \exp \left[-\frac{1}{\lambda} \left(1 - \frac{1}{r} \right) \right]$$

$$\boxed{\ln(N_e(r)) = \ln(N_0) - \frac{1}{\lambda_N} + \frac{1}{\lambda_N} \left(\frac{1}{r} \right)}$$

$$Y_{\text{fit}} = A_0 + A_1 X_{\text{fit}}$$

After fit $\rightarrow \begin{cases} \lambda_N = 1/A_1 \\ N_0 = \exp[A_0 + A_1] \end{cases}$

$$\oplus \boxed{T_e(r) = T_0 + a \frac{h}{r}}$$

$T_e \rightarrow T_e/1.66 \text{ K}$
~~h~~ $h \rightarrow h/R_0$

$$Y_{\text{fit}} = A_0 + A_1 X_{\text{fit}}$$

After fit $\rightarrow \begin{cases} T_0 = A_0 \text{ [MK]} \\ a = A_1 \text{ [MK/R}_0] \end{cases}$

VL: (Metis, C2)

$$N_e(r) = N_0 \left(\frac{r}{R_c} \right)^{-p}$$

$$R_c = \text{Inst-Rain}$$

~~VL~~

$$r \rightarrow r/R_0$$

$$R_c \rightarrow R_c/R_0$$

$$N_{e,0} \rightarrow N_{e,0}/10^8 \text{ cm}^{-3}$$

$$\boxed{\ln N_e(r) = \ln(N_0) + (-p) \ln(r/R_c)}$$
$$y_{\text{fit}} = A_0 + A_1 x_{\text{fit}}$$

After fit:

$$\begin{cases} N_0 = \exp[A_0] \\ p = -A_1 \end{cases}$$