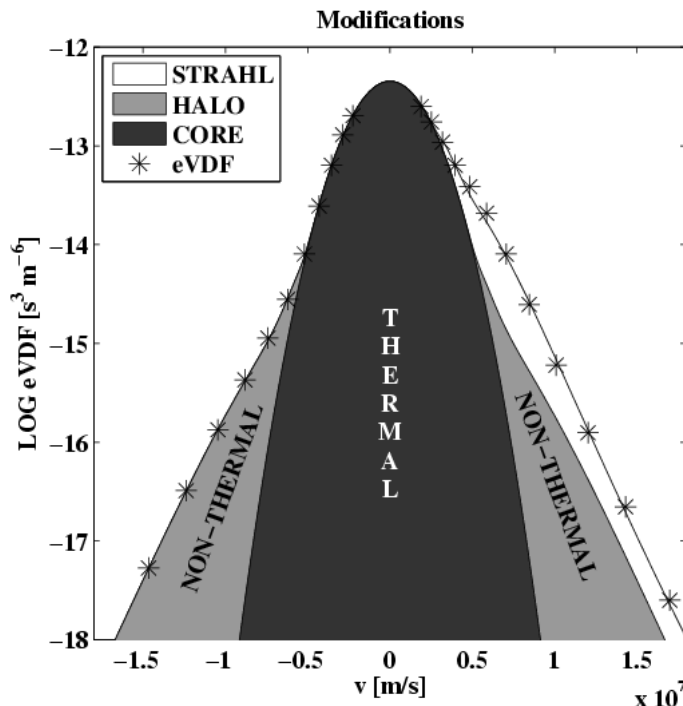


Radial evolution of electron distribution functions

Stverak et al., JGR, 2009



Core : bi-Maxwellian * flat-top

$$f_c = A_c \exp \left[-\frac{m}{2k} \left(\frac{1}{T_{c\perp}} v_{\perp}^2 + \frac{1}{T_{c\parallel}} (v_{\parallel} - \Delta_c)^2 \right) \right],$$

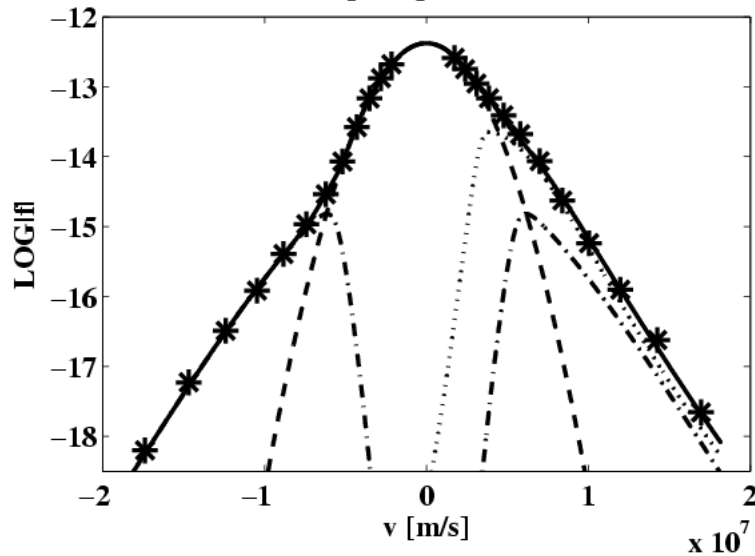
Halo : bi-Kappa * (1-flat-top)

$$f_{h,\kappa} = A_h \left(1 + \frac{m}{k(2\kappa_h - 3)} \left(\frac{v_{\perp}^2}{T_{h\perp}} + \frac{v_{\parallel}^2}{T_{h\parallel}} \right) \right)^{-\kappa_h - 1},$$

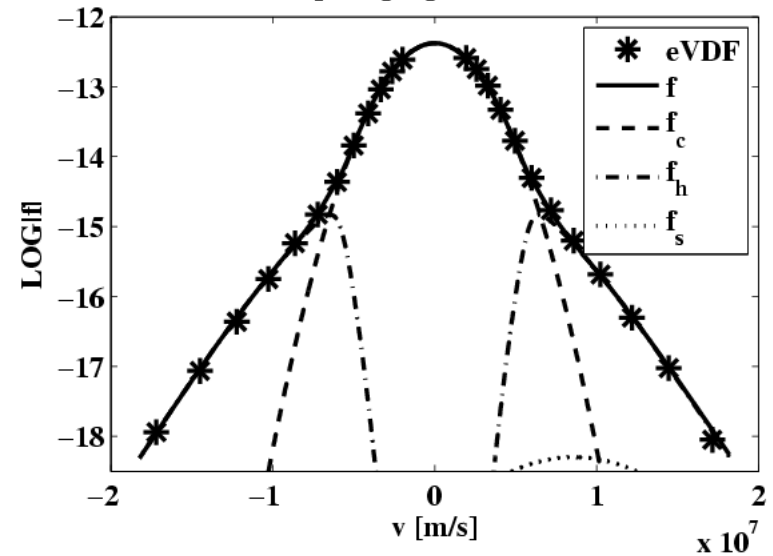
Strahl : bi-Kappa * (1-flat-top) from antisunward dir.

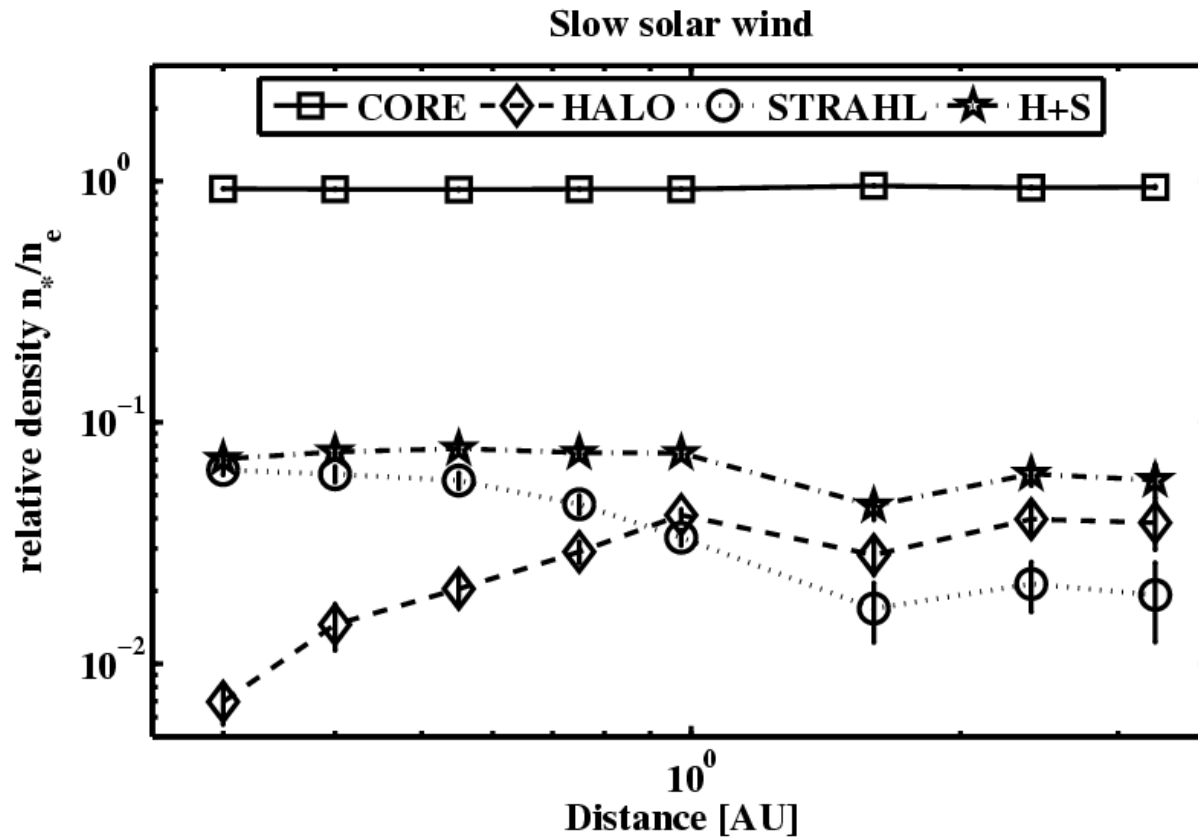
$$f_s = A_s \left(1 + \frac{m}{k(2\kappa_s - 3)} \left(\frac{v_{\perp}^2}{T_{s\perp}} + D \frac{(v_{\parallel} - \Delta_s)^2}{T_{s\parallel}} \right) \right)^{-\kappa_s - 1}$$

quasi parallel



quasi perpendicular





Strahl is transformed into halo with distance by particle/wave interactions ?

Similar to fast wind (Maksimovic et al. 2005)

eVDFs extrapolated back to the sun

model eVDF – core normalized

