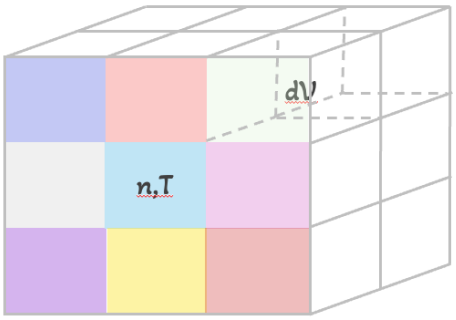
✧ Differential Emission Measure

- Emission Measure (EM): Total amount of emitting plasma along the LOS.

$$EM = \int_v n^2 \, dV$$

- Differential Emission Measure: Distribution of EM as a function of temperature.

$$DEM(T) = \frac{dEM}{dT} = \int n^2 \frac{dV}{dT}$$



✧ DEM from the Simulation

- For each cell, compute : $n^2 dV$
- Bin the contributions by temperature.
- Choose temperature bins (logarithmic bins).

log T1	log T2	log T3	log T. …..

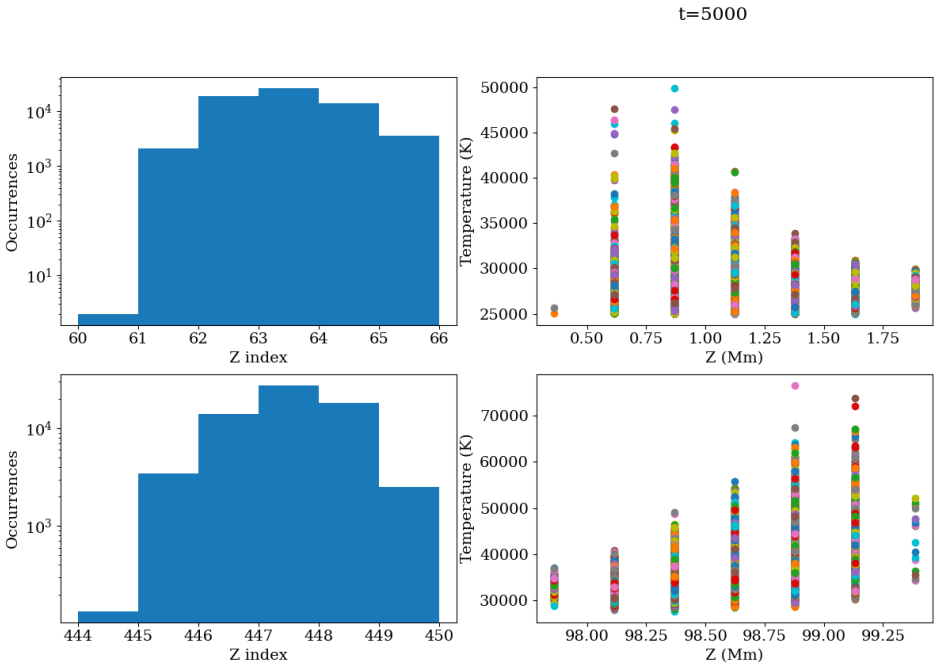
- Accumulate values ($n^2 dV$) for each bin – estimate the contribution of each cell based upon its log T.

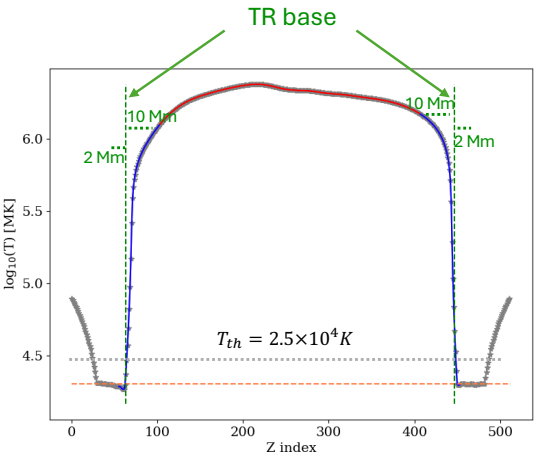
$$DEM\ (\log T) = \int_{\log T} n^2 \, dV$$

- Normalization:

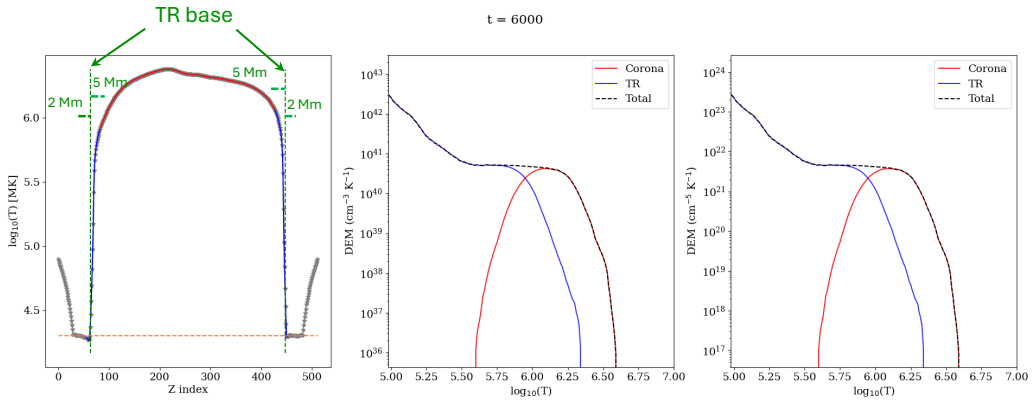
$$DEM(\log T) = \frac{DEM(\log T)}{T \times d(\ln T)} \rightarrow [\mathrm{cm^{-3}K^{-1}}] \quad \text{also expressed as } [\mathrm{cm^{-5}K^{-1}}] \ \& \ [\mathrm{cm^{-5}}]$$

✧ Determine the TR base



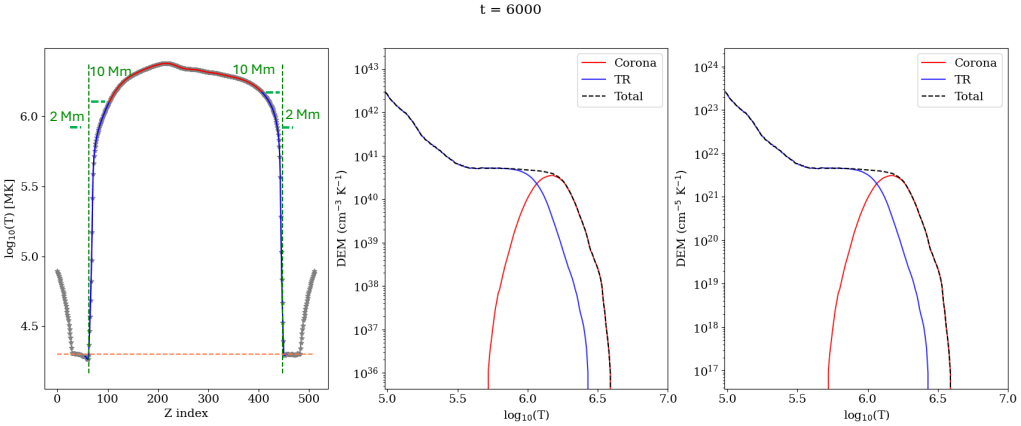


TR width = (2 + 10) Mm



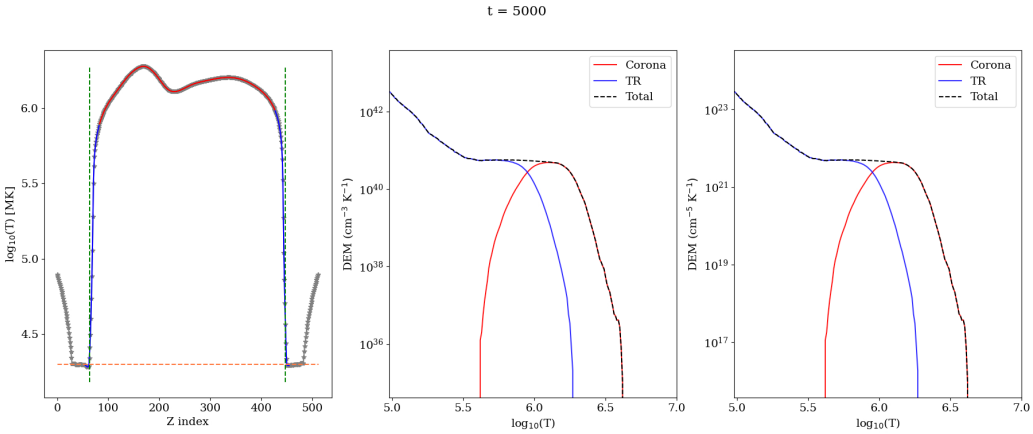
TR width = (2 + **5**) Mm

$$Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.01$$



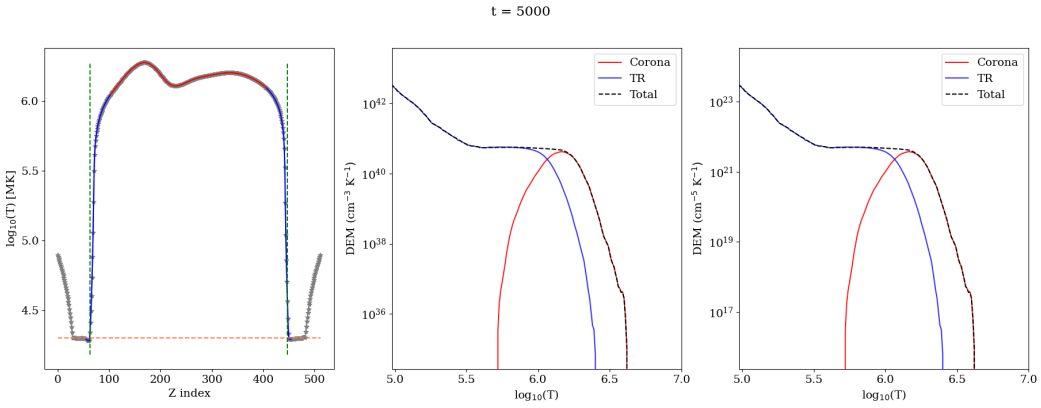
TR width = (2 + **10**) Mm

$$Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.03$$



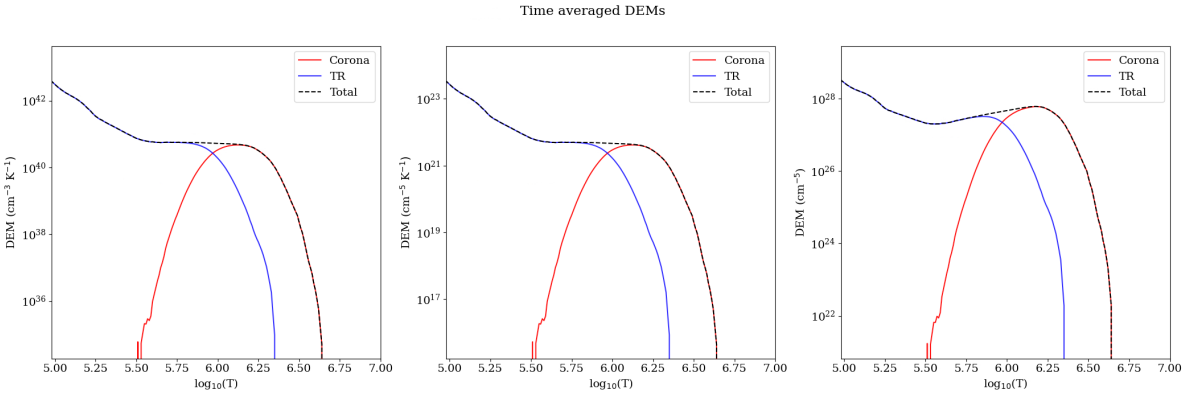
TR width = (2 + **5**) Mm

$$Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.003$$



TR width = (2 + **10**) Mm

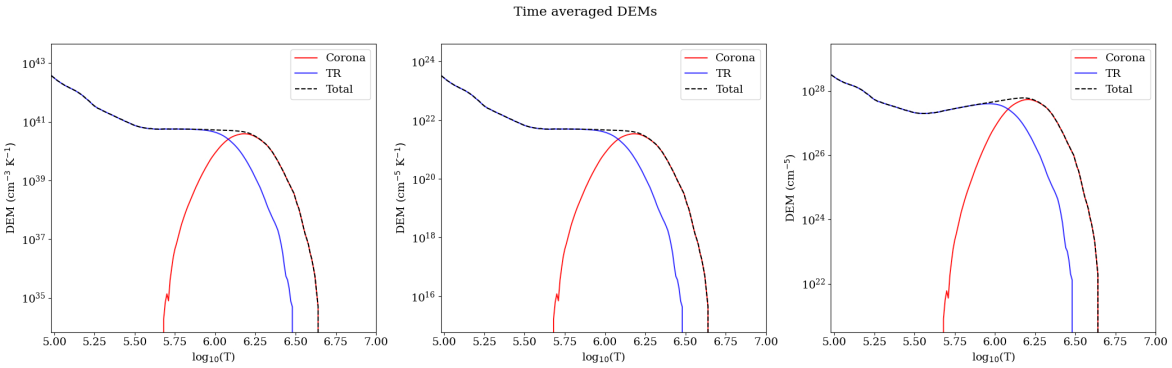
$$Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.009$$



TR width = (2 + **5**) Mm

$$Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.0138$$

$$TR + Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.0088$$



TR width = (2 + **10**) Mm

$$Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.0534$$

$$TR + Corona: \frac{DEM(3MK)}{DEM(1MK)} \sim 0.0088$$