

Electron thermal escape in the Sun

- at $0.5 R_{\odot}$ from \odot center

- electron thermal velocity is 14 times their escape velocity from the star gravity
- electron thermal velocity is 6 times their escape velocity from protons

⇒ electrons escape, but

- when their density \searrow , they became retained by protons
- very slow, quasi-static spreading

⇒ higher electron density than expected in surface layers, responsible for

- higher surface magnetization than expected non negligible
- electric fields in the star interior ?

- surface magnetic field

$$\mathbf{B} = \mu_0 (\mathbf{H} + \mathbf{M})$$

- what is measured by Zeeman effect is \mathbf{H} (4 demonstrations in the paper)
- the observed non-zero $\text{div}\mathbf{H}$ ($= -\text{div}\mathbf{M}$) revealed the effect (see paper)

Véronique Bommier, V.Bommier@obspm.fr