

Cesam 3 version (**still**) running in Coimbra



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- Installed in a **unix machine in 1997** (in collaboration with D. Valls-Gabaud) at the Coimbra Observatory.

The input physics:

- The **CEFF** equation of state (Eggleton et al 73 + Christensen-Dalsgaard 91)
 - Nuclear reactions rates given by **Caughlan and Fowler** (88)
 - Solar mixture from **Grevesse and Noels** (93)
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- OPAL** opacities (Iglesias and Rogers 96) + **Alexander and Ferguson** (93) following a prescription of Houdek and Rogl (96)
 - An **Eddington** $T(\tau)$ -law for the atm.
 - The **MLT** for convection
 - Options: diffusion + solid rotation

-The calibration of the Sun:

- $\alpha_{\text{MLT}} = 1.63$
- Helium abundance $Y=0.268$
- Metal abundance $Z=0.0175$

-Mainly for MS Population I and low mass stars

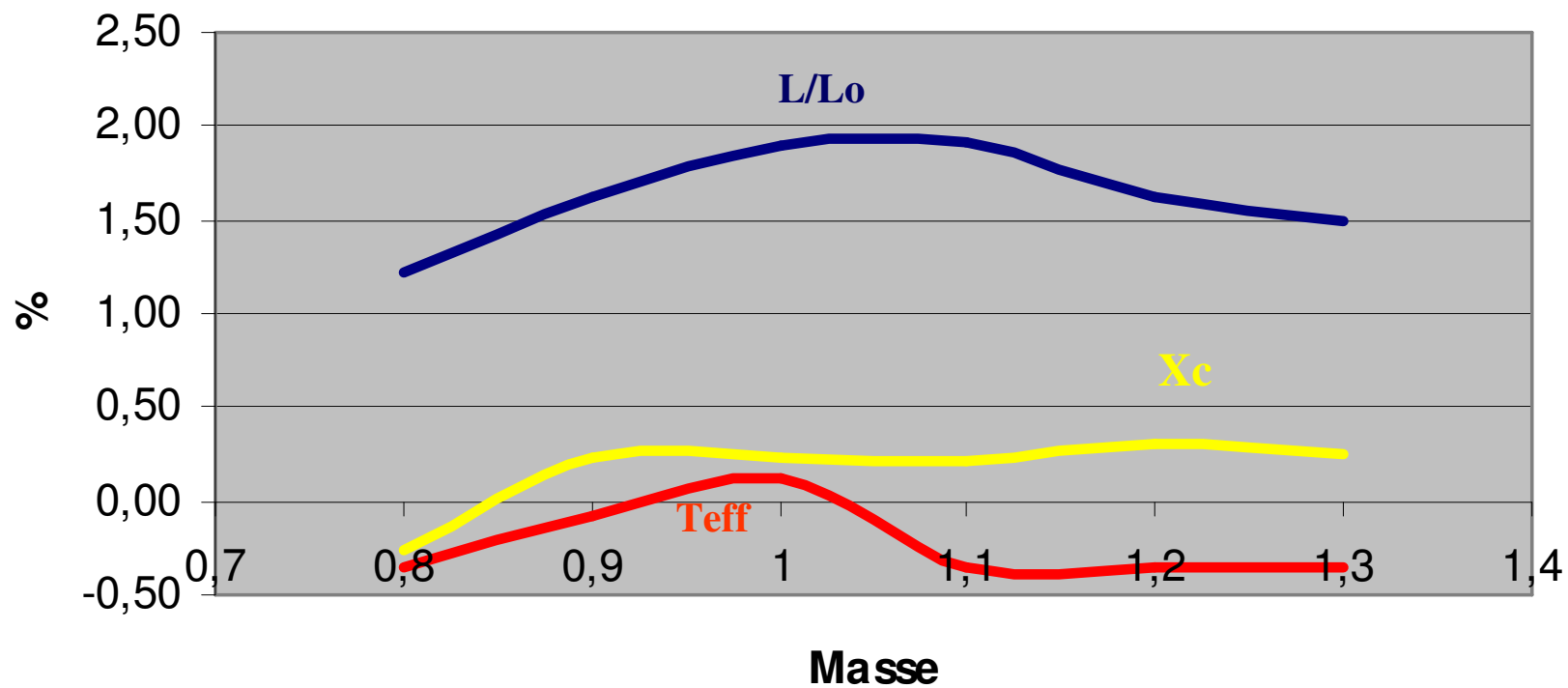
(eg. Lastennet et al 2002, Fernandes & Monteiro 2003, Fernandes & Santos 2004, ...)

-Improvements:

- **Not in version Cesam 3**
- **Revisiting the PMS phase in Cesam 2k (CAUP)**
(JP Marques, MJ Monteiro, F Palla, MJ Goupil, Y Lebreton, J Fernandes)

$\{100 \text{ My}; Y=0.28, Z=0.02, \alpha=1.6\}$

CESAM2k - CESAM3 (97)



Diff < 2%