

NOTES ON THE MODELS

Details of the physics adopted to calculate stellar models published in the FRUITY database are explained in details in [1].

Main features are:

- All models have been calculated with the Full-Network (FUN) stellar evolution code, that includes a full nuclear network from hydrogen to bismute (no post-process calculations are needed) [1];
- The adopted mass-loss rate has been calibrated on the Period-Luminosity and Period-Mass loss relations observed in Long Period Variable Stars [1];
- In the envelope, atomic and molecular opacities are calculated according to the changes in the chemical composition due to the occurrence of dredge up episodes [2];
- The interface radiation/convection at the inner border of the convective envelope is treated by applying an exponential decay of the convective velocities. As a by-product, we obtain the self-consistent formation of the ^{13}C pocket after each Thermal Pulse (TP) followed by Third Dredge Up. The extension of the that pocket varies from TP to TP following the shrinking of the He-intershell [3].

[1] O. Straniero, et al., Nuclear Physics A **777**, 311 (2006).

[2] S. Cristallo, et al., ApJ **667**, 489 (2007).

[3] S. Cristallo, et al., ApJ **696**, 797 (2009).