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## Nuclear astrophysics at the n\_TOF facility: some key cases in low mass stars evolution.

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Nuclear astrophysics is an interdisciplinary field at the crossing of various branches, from experimental and theoretical studies of nuclear cross sections to stellar evolutionary models of high complexity. The physics of stellar interiors can be constrained only if the adopted inputs in stellar modelling are known with high accuracy. For the nucleosynthesis of heavy elements, neutron capture cross sections are among the major sources of uncertainty and, thus, any improvement in their estimates represents a progress toward a better comprehension of stellar processes, as mixing and mass loss. Here I will present an astrophysicist perspective on some measurements carried out at the n\_TOF facility (Guerrero et al. 2013), held at CERN. I will discuss some explicative cases related to the determination of neutron capture cross sections of interest for the slow neutron capture process (the so-called s-process). The latter is at work in low mass Asymptotic Giant Branch stars, which are among the most important chemical polluters of the Universe.

### REFERENCES

C. Guerrero et al. , Eur. Phys. J. A 49 (2013) 27

### Selected session

Nuclear Astrophysics

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