

${}^7\text{Be}$ electron and proton capture in astrophysical conditions.

Monday, 9 September 2024 09:50 (25 minutes)

${}^7\text{Be}$ plays an important role in several astrophysical scenarios. In stellar hydrogen burning, the competition of its proton and electron captures determines the high-energy component of the solar neutrino spectrum. In BBN, its ultimate abundance determines the amount of ${}^7\text{Li}$ observed in primordial matter. Its ${}^3\text{He}({}^4\text{He}, \gamma){}^7\text{Be}$ and ${}^7\text{Be}(p, \gamma){}^8\text{B}$ production and destruction processes have been studied by the ERNA collaboration using a recoil mass separator. Recently, a new project was initiated to study the electron capture decay of ${}^7\text{Be}$ in different charge states for the first time under controlled conditions.

A review of this topic will be presented, with illustrations of recent experiments.

Primary author: GIALANELLA, Lucio (Dept. of Mathematics and Physics, University of Campania and INFN Napoli)

Presenter: GIALANELLA, Lucio (Dept. of Mathematics and Physics, University of Campania and INFN Napoli)

Session Classification: Stellar Evolutions and Hydrostatic Burning Processes

Track Classification: Stellar Evolutions and Hydrostatic Burning Processes