

Determination of ${}^7\text{Be}(p,\gamma){}^8\text{B}$ at astrophysical energy

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${}^7\text{Be}(p,\gamma){}^8\text{B}$ plays an important role in different astrophysical scenarios, in particular solar neutrinos and BBN. The last performed experiments show discrepancies eventually associated to systematic effects in the approach used, i.e. a proton beam on a ${}^7\text{Be}$ radioactive target. As a matter of fact, the currently accepted value is essentially determined by a single high precision experiment [1]. The situation might be improved using a ${}^7\text{Be}$ radioactive beam in combination with a windowless hydrogen gas target and a mass separator to detect the ${}^8\text{B}$ recoils. Such an approach has been already exploited in the past, where the low ${}^7\text{Be}$ ion beam intensities available did not allow to achieve useful results. A new effort has started at the CIRCE laboratory, where an intense ${}^7\text{Be}$ is routinely produced and the recoil mass separator ERNA is installed.

The results of the first measurements are presented and discussed.

[1] E.G. Adelberger et al., Review of Modern Physics, vol. 83, Issue 1, pp. 195-246