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Measurement of the $^{23}\text{Na}(\alpha,p)^{26}\text{Mg}$ cross section at astrophysically relevant energies

Observation of ^{26}Al in the galactic medium, via decay of its daughter nucleus ^{26}Mg , has provided direct evidence for ongoing nucleosynthesis in the galaxy [1]. While the main sites for ^{26}Al production are still uncertain, the C/Ne convective shell within massive stars is a prime candidate. Large-scale network calculations have been reported which assess the impact of various reactions on ^{26}Al production. A strong sensitivity to the $^{23}\text{Na}(\alpha,p)^{26}\text{Mg}$ reaction rate is found, with the ^{26}Al production changing by a factor of 3 for a factor 10 change in cross section [2]. We present here the results of a direct measurement of the $^{23}\text{Na}(\alpha,p)^{26}\text{Mg}$ cross section performed at Aarhus University [3], in addition to other recent measurements performed at Argonne National Laboratory [4] and TRIUMPH [5].

- [1] W. Mahoney et. al., *Astrophys. J.* 262, 742 (1982)
- [2] C. Iliadis et. al., *The Astrophysical Journal Supplement Series* 193, 16 (2011)
- [3] A.M. Howard et. al., *Phys. Rev. Lett.* 115, 052701 (2015)
- [4] S. Almaraz-Calderon et. al., *Phys. Rev. Lett.* 112, 152701 (2014)
- [5] J.R. Tomlinson et. al., *Phys. Rev. Lett.* 115, 052702 (2015)

Author: HOWARD, Alan Michael (Aarhus University (DK))

Presenter: HOWARD, Alan Michael (Aarhus University (DK))