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## **New measurement of the cross section of the Big Bang nucleosynthesis reaction $D(a,g)^6\text{Li}$ and its astrophysical impact**

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The recent observations of non-negligible amounts of  $^6\text{Li}$  in old halo stars [1] have renewed interest in the Big-Bang Nucleosynthesis (BBN) of  $^6\text{Li}$ . The deduced primordial  $^6\text{Li}$  abundance was found to be unexpectedly large compared to the BBN predictions. One important ingredient in the BBN predictions is the low-energy  $D(a,g)^6\text{Li}$  cross section. Up to now, the only available experimental result [2] for this cross section introduced an error of about a factor of 20 in the  $^6\text{Li}$  abundance at the energies of astrophysical interest ( $E_{\text{cm}} < 300$  keV). This uncertainty arises from the discrepancy between the theoretical low energy dependence of the S-factor and the experimental data. Accordingly, new measurements of the cross section of the  $D(a,g)^6\text{Li}$  reaction using Coulomb dissociation (CD) of  $^6\text{Li}$  at 150 A MeV have been performed recently at GSI. The preliminary GSI results, which indicate a drop of the S-factor as predicted by theory [3] will be presented as well their impact on the calculated  $^6\text{Li}$  abundance as a function of the baryon-to-photon ratio etc.

[1] M. Asplund et al., astro-ph/0510636, Astrophys J. in press

[2] J. Kiener et al., Phys. Rev. C 44, 2195 (1991)

[3] A. Kharbach et al., Phys. Rev. C 58, 1066 (1998)

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