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Coulomb breakup of ${}^7\text{Be}$

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Radiative capture cross sections at astrophysical energies are difficult to measure directly. The time reversed Coulomb breakup reaction may be used in such cases. Thus the Coulomb breakup of ${}^7\text{Be}$, preferably in the presence of heavy targets can be used to measure the production cross section of ${}^7\text{Be}$ by ${}^3\text{He} + {}^4\text{He} \rightarrow {}^7\text{Be} + \gamma$. This would enable measurements at low relative breakup energies (astrophysical energies) between the breakup fragments, thereby extracting information about the required radiative capture reaction. This avoids required extrapolation in the direct method from measurements performed at higher energies. We plan to measure the ${}^7\text{Be}$ breakup on ${}^{12}\text{C}$ and ${}^{208}\text{Pb}$ targets at HIE-ISOLDE to determine the astrophysical S factor $S_{34}(0)$. Preliminary calculations will be presented.

Primary author: SAHA, Swapan K. (Bose Institute)

Co-author: GUPTA, Dhruba (Bose Institute (IN))

Presenter: SAHA, Swapan K. (Bose Institute)

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