

Cross sections of ${}^7\text{Be}+d$ measured at low energies and implications for Big-Bang nucleosynthesis

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The cross sections of nuclear reactions between the radioactive isotope ${}^7\text{Be}$ and deuterium, a possible path of reducing the production of mass-7 nuclides in Big-Bang nucleosynthesis, were measured at center-of-mass energies between 0.2 MeV and 1.5 MeV. The experiment was performed with the ANASEN active-target detector system at the RESOLUT facility of Florida State University. We measured cross sections consistent with prior measurements at higher energies but significantly higher yields at lower energy and inside the Gamow window. The implications for the primordial lithium problem will be discussed.

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