

Abstract Submitted
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^8B Breakup, the Longstanding Puzzle¹ MUSLEMA PERVIN, NSCL, MSU, FILOMENA NUNES, Dept. of PA, NSCL, MSU — The cross section of ^8B breakup reaction provides an indirect estimate of the $^7\text{Be}(p, \gamma)^8\text{B}$ reaction rate. This reaction is important because of its connection to the solar neutrino problem. At low (stellar) energies the $^7\text{Be}(p, \gamma)^8\text{B}$ reaction is dominated by the electric dipole transition (E1), while the ^8B breakup reaction rate has a significant contribution from the quadrupole transition (E2). To obtain the astrophysical S-factor $S_{17}(E)$ from different ^8B breakup experiments we must understand the contribution of E2 to the measured observables. Previous model calculations could not provide an unambiguous estimate of E2. In our present work we use XCDCC (Extended Continuous Discretized Coupled Channel) to explore the impact of the core (^7Be) spin, deformation and excitation to ^8B breakup.

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