

Abstract Submitted
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Theoretical study of intermediate mass fragments in proton-induced reactions MOHAMMAD S SABRA, USRA Space Science Department, Marshall Space Flight Center — Cross-section calculations, including energy spectra, angular distribution, mass and charge distributions, of secondary fragments produced by proton-induced reactions are crucial for validation of physics models used in space development. Within the framework of SAPTON model, which allows the emission of nucleons, light clusters, and intermediate mass fragments (IMFs), we have analyzed energy spectra, angular distributions, and production cross-sections for H, He, Li, Be, and B isotopes produced in collisions of 1.2, 1.9, and 2.5 GeV protons with Al target. The results are compared with the available experimental data. SAPTON reproduces the data well, suggesting that nucleons are mainly created in the intra-nuclear stage, while light clusters and IMFs are created in the surface coalescence stage, as well as in the pre-equilibrium/evaporation stages of the reaction process.

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