Nuclei in the Cosmos - IX



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Nuclear models for light systems

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First we present general properties of low-energy reactions between light nuclei. Different theoretical approaches are briefly described. We present recent results on the 18F(p,a)15O reaction, obtained in a microscopic cluster model. We point out that some 1/2+ resonances, generally disregarded, may play a role. The spectroscopic properties of 19Ne, and charge symmetry between 19Ne and 19F are also discussed.

Another application deals with the 14C(n,g)15C reaction, where we use the Asymptotic Normalization Constant (ANC) method. By using recent data on 14O+p elastic scattering, we show that some indirect results on 14C(n,g)15C are inconsistent with charge symmetry.

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