



Cross section data for the astrophysical p-process

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An overview will be given on the astrophysical p-process that is Responsible for the production of the heavy proton rich nuclei known as p-nuclei. The nuclear physics input of the p-process scenario involves the knowledge of photoinduced reaction cross sections, mostly calculated within the Hauser-Feshbach statistical model.

ATOMKI has a long range program, supported by the European Research Council, to study reactions relevant to p-process using low energy accelerators. A full description of the scientific program, its advances and limitations will be provided.

The measured (p, γ) and (α, n) radiative capture cross section data can test the reliability of the model calculations in the proton rich region as well as provide experimental information directly relevant to the p-process. Recent advances involving also the study of (p, n) reactions underline the importance of the stellar enhancement factor and call for a modified optical parameter set. In addition, complementary low energy elastic alpha scattering experiments can serve as a tool to determine alpha optical potentials, an important and relatively poorly known ingredient of statistical model calculations.

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The seminar will be given in English.
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