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New empirical formulae for the in-medium nucleon-nucleon cross-section

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Abstract: New empirical formulae for in-medium nucleon-nucleon cross-section are presented and used to study the proton-nucleus interaction in the framework of Glauber model. The total, absorption and elastic cross-sections are calculated for many target nuclei. The calculated total cross-sections using the in medium effective factor, fm4, give a reasonable fit with the experimental data. In addition, the in-medium factors fm1, fm2 and fm3 successfully reproduce the absorption cross-section at energies up to 600 MeV.

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