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Low-energy Cross Section Measurments of $^{12}\mathrm{C}(\mathrm{p},\gamma)$ and $^{13}\mathrm{C}(\mathrm{p},\gamma)$ Deep Underground at LUNA

Tuesday 6 September 2022 20:02 (2 minutes)

Cross section measurements of $^{12,13}\mathrm{C}(\mathrm{p},\gamma)^{13,14}\mathrm{N}$ have been performed at the Laboratory for Underground Nuclear Astrophysics (LUNA), where the low-background environment and high beam currents of the 400 kV accelerator allowed to obtain cross section data for these reactions at lower energies and with smaller statistical uncertainties than previously available towards astrophysical energies. Considering possible systematic uncertainties, the two reactions were studied using different solid targets and complementary detection setups. We will present the experimental campaigns and their results.

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