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Measurements of gamma-ray production cross sections of proton beams at energies of 80-125 MeV with a natural calcium target.

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Gamma-ray production cross sections were measured for strong gamma-ray lines excited in the proton bombardment of a calcium target. The cross sections were obtained for the reaction $\text{natCa}(p, \text{py})^{40}\text{Ca}$, with a proton beam in the energy range from 80 MeV to 125 MeV delivered by the SSC cyclotron at iThemba LABS. The gamma-rays were detected with the high-purity Ge detectors of the AFRODITE array in the angular range from 90 to 168 degrees. We extracted excitation functions for these reactions for the first time. The results for the cross sections and their importance for astrophysics and medical therapy will be discussed.

Apply to be considered for a student award (Yes / No)?

YES

Level for award (Hons, MSc, PhD, N/A)?

MSc

Main supervisor (name and email) and his / her institution

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**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

No

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