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Recent calculations have suggested that the region of strong octupole correlations in the light actinides extends to higher Z values than previously thought, with neutron-deficient plutonium ($Z = 94$) and curium ($Z = 96$) nuclei predicted to have large β_3 values in their ground states [1, 2]. In order to test the predictions, an experiment has been performed to study the structure of neutron-deficient plutonium ($Z = 94$) isotopes. The experiment was carried out using the AGATA γ -ray spectrometer [3, 4] together with the PRISMA [5] magnetic spectrometer and the DANTE channel-plate array [6]. The main aim of the experiment was to identify excited states in the isotopes ^{232}Pu and ^{234}Pu . The nuclei of interest were populated using multi-nucleon transfer reactions induced with a beam of ^{112}Sn incident on a thin ^{238}U target. Reaction channels were selected by identifying the beam-like reaction products behind the focal plane of PRISMA and, where possible, detecting target-like products in the DANTE detectors. Analysis of the data is ongoing and the preliminary results will be presented.

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