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Lifetime measurements of 202Pt and 206Hg: Shape evolution towards N=126 closed shell

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The aim of the proposed experiment is to perform lifetime measurements and in-beam spectroscopy of ^{202}Pt for the first time. We also intend to carry out lifetime measurements of ^{206}Hg in order to expand the systematics of excited levels of even-even isotopes and get a better insight into the shape evolution towards N = 126 closed shell since this area of isotopes is experimentally very challenging and very little is known. These nuclei are expected to be more spherical near shell closure, but there is a lack of data to support this. Excited states of ^{202}Pt and ^{206}Hg will be populated simultaneously by multi-nucleon transfer (MNT) reactions with a beam of ^{136}Xe impinging on an enriched ^{204}Hg target. We intend to employ the dedicated plunger device in reversed configuration, which was commissioned at LNL, together with the AGATA advanced γ-ray tracking array and the PRISMA separator. The PRISMA separator will identify beam-like reaction fragments, and AGATA will detect γ rays of their binary partners. We ask for ^{136}Xe beam with an energy of 1110 MeV and 7 days of beam time with the PIAVE - ALPI accelerator complex.

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