Contribution ID: **33** Type: **not specified**

Investigation of the rotational band in ^{120}Sn

Thursday 10 July 2025 17:40 (20 minutes)

We propose to search for the intruder band that builds on the deformed excited 0^+ states in ^{120}Sn using fusion-evaporation. While our recent (n,γ) measurement showed that the low-lying excited $0^+_{2,3}$ states in ^{120}Sn are deformed, the expected rotational band which builds on the deformed 0^+ states have not yet been observed. The aim of this complementary fusion-evaporation experiment is to identify and place the high-spin members of the intruder band, exploiting the high sensitivity of the AGATA+SAURON setup. Observation of the band structure will unveil the underlying deformation and elucidate whether the intruder band is rotational, vibrational, or a mixture of both. Combined with the systematics of the other Sn isotopes, our results will contribute to improve the understanding of shell evolution in the semimagic chain.

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Session Classification: Session 1