

Lifetime Measurements of high-spin states in ^{94}Ru using DSAM

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The lifetimes of the high-spin states in the semi-magic ($N=50$) nucleus ^{94}Ru have been determined using the Doppler Shift Attenuation Method (DSAM). Excited states in ^{94}Ru nucleus were populated via $^{58}\text{Ni}(^{40}\text{Ca}, 4p)^{94}\text{Ru}^*$ fusion-evaporation reaction at the GANIL accelerator complex. DSAM lifetime analysis was performed on the Doppler broadened line shapes in energy spectra obtained from the emission of γ -rays while the residual nuclei were slowing down in the thick (6 mg/cm^2) metallic ^{58}Ni target. The lifetime results have been validated with respect to the previous measurements and totally eight excited-state lifetimes have been obtained. Large-scale shell model calculations have been carried out and compared with experimental results.

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