

# Lifetime Measurements of Normally Deformed and Superdeformed States in $^{82}\text{Sr}$ <sup>1</sup>

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Lifetimes of a superdeformed band in  $^{82}\text{Sr}$  were measured with the centroid shift method. The measured average quadrupole moment of this band corresponds to a quadrupole deformation of  $\beta_2 \approx 0.49$ , which is slightly smaller than both the theoretical prediction, and the measured deformation of the SD band in the neighboring isotope  $^{84}\text{Zr}$ . Lifetimes of high spin states of three normally deformed rotational bands in  $^{82}\text{Sr}$  were also measured with the Doppler shift attenuation method technique. The quadrupole moments of these normally deformed bands show a decrease at the highest spins, supporting the predicted band terminations.

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