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Searching for exotic shapes in silicon-28

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Abstract content (Max 300 words) Formatting & Special chars

The wide range of exotic nuclear shapes in light $N=Z$ nuclei such as Mg-24 and Si-28 provides a significant challenge to nuclear theory. Of particular importance in this regard is trying to understand the connection between the observed nuclear clustering phenomenon in these nuclei and the well-established nuclear shell model.

Inelastic scattering reactions using a beam of alpha particles can be used to locate states associated with deformation and clustering at high excitation energies and low spin. An experiment was performed at iThemba LABS using the K600 investigating the scattering of alpha-particles from a silicon target. New states are identified; structural interpretations will be discussed.

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