

Predicted Clustering on the Surface of Sn Isotopes Explored in Nuclear Reactions

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The influence of clusters remains an important ingredient of a formulation [1] of an equation-of-state (EOS) of nuclear matter. A prediction [2] based on a generalized relativistic mean-field model of the EOS indicates an isotope-dependant alpha-clustering on the surface of Sn. As the nuclear system becomes more asymmetric, preformation of alpha clusters in the ground state of the nucleus is expected to decrease drastically. As will be shown, a recent comparison [3] with experimental results of an alpha pickup reaction supports the variation of clustering as suggested by the EOS. The implications of this study for other proposed investigations of the clustering in Sn isotopes will also be discussed.

References

- [1] S. Typel, G. Röpke, T. Klähn, D. Blaschke, and H.H. Wolter, *Phys. Rev. C* **81** (2010) 015803.
- [2] S. Typel, *Phys. Rev. C* **89** (2014) 064321.
- [3] A.A. Cowley, *Phys. Rev. C* **93** (2016) 054329.