

Abstract Submitted  
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**Exotic phenomena in nuclei** THOMAS NEFF, National Superconducting Cyclotron Laboratory, Michigan State University, HANS FELDMIEIER, Gesellschaft für Schwerionenforschung, Darmstadt, Germany, ROBERT ROTH, Institut für Kernphysik, TU Darmstadt, Germany — In the Fermionic Molecular Dynamics (FMD) model the nuclear many-body system is described using Slater determinants with Gaussian wave-packets as single-particle states. The flexibility of the FMD wave functions allows for a consistent description of shell model like structures, deformed states, cluster structures as well as halos. An effective interaction derived from the realistic Argonne V18 interaction using the Unitary Correlation Operator Method is used for all nuclei. Results for nuclei in the  $p$ -shell will be presented. Halo features are present in the Helium isotopes, cluster structures are studied in Beryllium and Carbon isotopes. The interplay between shell structure and cluster structures in the ground and the Hoyle state in  $^{12}\text{C}$  will be discussed.

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