

Abstract Submitted  
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**Variational microscopic treatment of halo nuclei**<sup>1</sup> IVAN BRIDA, FILOMENA NUNES, NSCL and Department of Physics and Astronomy, Michigan State University, East Lansing MI 48824, KALMAN VARGA, Vanderbilt University, Nashville, TN 37235 — We present first results of a variational microscopic model for two neutron halo nuclei. The wavefunction of the system consists of two parts: a core and the valence neutrons. The core is given in terms of correlated Gaussians. The three-body asymptotics and dynamics between the core and valence neutrons are taken into account by means of hyperspherical functions employed to describe the motion of the valence particles. To avoid the spurious motion of the center of mass, Jacobi coordinates are used for the entire system. The wavefunction is properly antisymmetrized. Both - core's and valence - pieces of wavefunction contain nonlinear parameters involved in energy minimization procedure. Results for <sup>6</sup>He are presented and compared with the three-body model.

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