

Neutron Halo and Nuclear Shell Structure in New Nuclide ^{31}Ne

REN Zhong-Zhou,¹ CHEN Bao-Qiu,² MA Zhong-Yu^{2,3} and XU Gong-Ou¹

¹ Department of Physics, Nanjing University, Nanjing 210008, China

² China Institute of Atomic Energy, Beijing 102413, China

³ CCAST (World Laboratory), P.O. Box 8730, Beijing 100080, China

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Abstract: The ground state properties of new nuclide ^{31}Ne are investigated within the framework of the density-dependent relativistic mean-field theory. One-neutron halo in ^{31}Ne is predicted. Calculations also show that the ground state of ^{31}Ne is $(3/2)^-$ and it can be used for the testing of the nuclear shell structure near the neutron-drip line.

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Key words: neutron halo, nuclear shell structure, neutron-rich nuclei

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