

Abstract Submitted
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Ground state of the hydrogen negative ion¹ BOYAN OBRESHKOV

— Based on recently developed variational many-body Schrödinger equation for electrons with Coulomb interactions [1], we provide first numerical results for the ground state electron structure of the hydrogen negative ion. It is shown that Fermi-Teller promotion effect together with non-adiabatic screening effects due to the Pauli's exclusion principle are responsible for the weak binding of the anion. The calculated ionization potential $J = -1/2 - 2\lambda + \langle 1/r_{12} \rangle$ of the hydrogen negative ion is compared with the experiment, where λ is the mean binding energy per one electron in the ground state.

[1] B. D. Obreshkov , Phys. Rev. A **78**, 032503 (2008).

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