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Resonant charge transfer in H^- ions scattering off Si(100) surfaces BOYAN OBRESHKOV, UWE THUMM, Dept. of Physics, Kansas State University — We present numerical calculations on the one-electron charge exchange between an unreconstructed Si(100) surface and H^- ions that are incident at kinetic energies of 1 keV. The ground state electronic structure of the surface is derived within a self-consistent screened pseudopotential Thomas-Fermi method. Si crystal wave functions and energies of the electron states that this potential holds are calculated by solving one-particle Schrödinger equations. Resonant charge transfer ion-surface couplings are derived, and Newns-Anderson model is solved within a self-energy method. The neutralization probability of the anion after the collision is calculated and compared with available experimental data of [1].

[1] M. Maazouz *et al.* Surf. Sci. **398**, 49 (1998).

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Boyan Obreshkov
obreshko@phys.ksu.edu
Dept. of Physics, Kansas State University

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