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Neutralization of H- on vicinal surfaces[1] BOYAN OBRESHKOV, UWE THUMM, Kansas State University — Experiments [1,2] and theoretical calculations [3] for the neutralization of H- ions on metallic surfaces show a dependence on the surface morphology. The availability of nanostructured metallic surfaces motivates the study of the effects of the surface structure on the neutralization probability of H-. We discuss the results from a theoretical study of the electron charge transfer rate and neutralization probability of H- ions colliding with metal surfaces, based on a generalized Thomas- Fermi approach for the description of the equilibrium electronic structure of the surface [4]. The ion-surface scattering calculations were performed for vicinal surfaces with different step densities at ion collision energies of 1 keV. For the studied range of collision parameters and surface morphologies, our numerical results for the neutralization probability for "step up" and "step down" scattering are significantly different, and the anion is more efficiently neutralized if the out asymptote of its scattering trajectory crosses vicinal structures in "step down" direction.

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