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**The Effect of Image States on Resonant Neutralization of Hydrogen Anions near Metal Surfaces** HIMADRI S. CHAKRABORTY, THOMAS NIEDERHAUSEN, UWE THUMM, James R. MacDonald Laboratory, Kansas State University, Manhattan, KS 66506-2604 — We scrutinize the role of electronic image states on the ion–survival by comparing the resonant charge transfer dynamics of hydrogen anions near Pd(111), Pd(100), and Ag(111) surfaces [1,2]. It is found that image states that are degenerate with the metal conduction band favor the recapture of electrons by outgoing ions. In sharp contrast, localized image states that occur inside the band gap hinder the recapture process and thus enhance the ion–neutralization probability.
[1] Chakraborty et al., Nucl. Instr. Meth. B, in print,
[2] Chakraborty et al., Phys. Rev. A 69, 052901

Himadri S. Chakraborty
James R. MacDonald Laboratory, Kansas State University
Manhattan, KS 66506-2604

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