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H Ion Fractions Scattered from Ag(111) surfaces BOGDANA BAHRIM, Lamar University — Negative hydrogen ion fractions resulted from scattering positive ions on Ag(111) surfaces are reported for a large range of incident angles, and incoming projectile energy of 1 keV. The data show a very good agreement between theoretical calculations and experimental results. The ion fraction increases with the incident angle because at steeper angles the projectile spends less time interacting with the surface, and therefore there is less electron loss. For the Ag(111) surface, a projected band gap opens between -0.6 eV and -5 eV in the direction normal to the surface. The existence of a band gap strongly affects the ion charge transfer with the surface, and therefore the behavior of ion fractions. Experimental results obtained for ion scattering on Ag(111) and polycrystalline Ag are compared and discussed.

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