Accurate Measurements of the Pitch-Angle Scattering of Beam Ions\textsuperscript{1} W.W. HEIDBRINK, University of California, Irvine, — The pitch-angle scattering rate of a dilute population of 75-keV deuterium ions is measured in a well-diagnosed, relatively quiet, magnetically-confined deuterium plasma. Neutral particle diagnostics detect the fast-ion density in velocity space following a short 10-ms pulse of injected beam ions. The data are compared to the classical theory of diffusion in velocity space caused by many, small-angle, Coulomb-scattering events. Within uncertainties of $\sim 15\%$, the data confirm the classical theory.

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