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**Tracing the Origin of Orientation Effects in Excitation-Ionization Collisions** A.L. HARRIS, T. SAXTON, Illinois State University — The ionization of atoms and molecules is of great importance in many areas of physics, chemistry, and biology. Recently, interest has increased in collisions involving oriented target atoms or molecules. Specifically, several groups have investigated the effects of initial- and final-state target orientation on fully differential cross sections (FDCS). These results have shown that the shape of the FDCS for collisions with oriented atoms or ions can change significantly with the orientation direction of the target. We investigate some possible causes of these orientation effects using our 4-Body Distorted Wave model for both fully and double differential cross sections.

A.L. Harris
Illinois State University

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