Determinations of Differential Cross Sections of the State-to-State Inelastic Collisions in Bulbs: A Three-Dimensional Sliced Fluorescence Imaging Study

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Differential cross sections of the state-to-state inelastic collisions can be determined by the three-dimensional sliced fluorescence imaging techniques in a flow cell. An optical-optical double resonance excitation scheme is employed in the state selection and detection of one of the colliding species. From the collision-induced fluorescence images, a double Legendre moment analysis framework is utilized to extract the state-to-state inelastic differential cross sections of CN in the A state with He.