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Hypersonic Wake Diagnostics using Iodine Laser-Induced Fluorescence J.L. MILLS, C.I. SUKENIK, Old Dominion University, R. JEFFREY BALLA, NASA Langley Research Center — Measurements in the wake region created by models in supersonic and hypersonic flows are required in order to understand a variety of problems in aerodynamics. These measurements need to be nonintrusive to fully understand the nature of the flow. One nonintrusive method being investigated is the use of visible Laser Induced Fluorescence (LIF) of I_2 . The visible band region of I_2 extends from around 500 - 700 nm, excitation in the visible region is from the ground X state to the excited B state. One particular process of interest for excitation in this region is direct and spontaneous predissociative decay. We are investigating the possibility of using both molecular and atomic Iodine for a range of diagnostics including flow velocimetry. Work supported by NASA Langley Research Center.

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