OPTICAL STARK MEASUREMENT OF THE $C^3\Delta - X^3\Delta$ TRANSITION FOR TiS COOLED IN A SUPERSONIC FREE-JET EXPANSION

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The high resolution laser induced fluorescence spectrum of TiS was recorded for the $C^3\Delta - X^3\Delta$ transition and optical Stark measurements were performed on the $R_1(1), Q_1(1)$, and $P_1(2)$ branch features. The TiS radicals were produced by the laser ablation of a titanium rod in the presence of a supersonic expansion of CS_2 and Ar. The $C^3\Delta - X^3\Delta$ spectrum was fit to within reasonable agreement with the parameters determined by Jonsson and Launila[a]. The analysis of the Stark measurements will be reported and a comparison with the values for the permanent electric dipole moment of the isovalent TiO[b] will be given.

a. J. Jonsson and O. Launila, Mol. Phys. 79, 95,(1993).
b. T.C. Steimle and J.E. Shirley, J. Chem. Phys. 93, 1568,(1990).