

ROTATIONAL ANALYSIS OF THE $C^2\Pi$ STATE OF SrF BY OPTICAL-OPTICAL DOUBLE RESONANCE SPECTROSCOPY

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The $C^2\Pi$ ($v = 0$) state of SrF has been investigated at high resolution using the technique of optical-optical double resonance spectroscopy. SrF was synthesized in a Broida-type oven by the reaction of Sr metal vapor with SF₆. The band heads of the $A^2\Pi - X^2\Sigma^+$ transition were first excited using a linear dye laser ($\sim 1 \text{ cm}^{-1}$ bandwidth). A Ti:Sapphire ring laser was then utilized to record high-resolution laser excitation spectra of the $C^2\Pi_{1/2} - A^2\Pi_{1/2}$ and $C^2\Pi_{3/2} - A^2\Pi_{3/2}$ transitions. A rotational analysis of these transitions is in progress. In addition, an investigation of the $D^2\Sigma^+$ state is currently underway and preliminary observations will be presented.