The use of laser ablation source-equipped chirped pulse and Balle-Flygare type cavity spectrometers have been utilized to accurately measure multiple isotopologues of the tin monochloride molecule in the \( \chi^2\Pi_1^+ \) state. The molecule has been synthesized by ablating tin foil in the presence of 0.3\% \( \text{Cl}_2 \) in Ar. Rotational constants, nuclear electric quadrupole coupling constants, and magnetic hyperfine constants for the many isotopologues will be discussed. Although rotational analyses of this molecule have been previously performed\(^b\), this is the first high-resolution, microwave study of SnCl.

\(^a\)Support from CHE-1011214