ANALYSIS OF THE $\lambda = 1.3$ mm SPECTRUM OF ORION-KL

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We previously reported on our observations of the Orion-KL star forming region from 223 – 251 GHz using the wideband $\lambda = 1.3$ mm receiver at the Caltech Submillimeter Observatory (CSO). A noise level of $\sim$30 mK was obtained after the double sideband spectra were deconvolved. This noise level allows the identification of significantly more lines than were observed in previous surveys of this source. A total of 5378 spectral lines with peak intensities $>3\sigma$ have been identified. We have begun line assignment and spectral analysis of these results, first focusing our efforts on known interstellar molecules. From this initial analysis, many newly identified weak transitions of previously detected molecules have been assigned. Spectral lines from isotopologues and excited vibrational states of known molecules have also been identified. Yet comparison to the JPL and CDMS spectral line databases enables assignment of only $\sim$20% of the observed spectral lines. Challenges in analysis also arise from the large amount of spectral data obtained in this broadband survey, which makes traditional by-eye line identification approaches inefficient. In this talk we will discuss the progress of the spectral line assignment for this survey, the software tools that we are developing to aid in the analysis, and the need for additional laboratory spectroscopic studies to aid in line identification.