A LASER ABLATION SLIT-JET CLUSTER SOURCE FOR HIGH RESOLUTION INFRARED STUDIES

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A novel experiment combining a laser ablation cluster source with a slit-jet expansion for the study of metal-molecular radicals by high resolution infrared absorption spectroscopy is presented. This experiment takes advantage of the nearly unlimited capabilities of a laser ablation technique and the high densities, longer path lengths and sub-Doppler characteristics of a slit-jet supersonic expansion. The details of the apparatus including the ablation cluster source and a new high resolution infrared laser spectrometer (2500 cm^{-1} - 5000 cm^{-1}) are discussed.