CAVITY RING DOWN SPECTROSCOPY IN A PULSED SUPERSONIC SLIT NOZZLE DISCHARGE

HAROLD LINNARTZ, TOMASZ MOTYLEWSKI, and JOHN P. MAIER, *Institute for physical chemistry, University of Basel, Klingelbergstrasse 80, CH 4056 Basel, Switzerland.*

A rotationally resolved spectrum of the $^2\Pi$–$X^2\Pi$ electronic transition of C_6H and C_6D in the gas phase is presented, using cavity ring down spectroscopy in combination with a supersonic slit nozzle discharge technique. The source offers the possibility to generate a dense and cold ($T_{rot} < 25$ K) carbon plasma that is stable for many hours. Both the experiment and the first results, aimed at locating the electronic transitions of neutral carbon chains of possible astrophysical interest, will be presented.