

## SPECTRA OF ETHANE IN He DROPLETS IN THE 3 $\mu\text{m}$ RANGE

LUIS GOMEZ, EVGENIY LOGINOV, DMITRY SKVORTSOV, HIROMICHI HOSHINA, and ANDREY F. VILESOV, *Department of Chemistry, University of Southern California, Los Angeles, CA 90089-0482.*

The infrared spectra of ethane molecules embedded in He droplets have been studied via depletion spectroscopy in the  $\nu = 2880\text{-}3000\text{ cm}^{-1}$  spectral range. Four features observed in the spectra are assigned as the  $\nu_5$ ,  $\nu_{8+11}$  (perpendicular and parallel components), and  $\nu_7$  vibrational bands. Band origins and rotational constants for ethane in He are obtained and compared with corresponding gas phase values. Spectra of large ethane clusters  $(\text{C}_2\text{H}_6)_n$  (with  $n = 1300\text{-}13000$ ) in He are also reported.