Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Observation of the NaD C1Σ+ state near the region of dissociation limit[1] THOU-JEN WHANG, SOUL-EN CHENG, MING-HONG LIN, Department of Chemistry, National Cheng Kung University, Tainan, Taiwan, CHIN-CHUN TSAI, Department of Physics, National Cheng Kung University, Tainan — Using pulsed optical-optical double resonance fluorescence depletion spectroscopy, we observed the C1Σ+ state levels of gaseous sodium deuteride molecules. In this work, total of 369 rovibrational levels were recorded including vibrational quantum numbers from 10 to 58 and rotational quantum numbers from 3 to 10. The avoid-crossing of shallow-dish well in the inner potential energy curve causes the irregular behaviors of Bv and ΔGv near the dissociation limit. A comparison of molecular properties between NaH and NaD will be presented.

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Date submitted: 30 Jan 2015 Electronic form version 1.4