Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Measurement of the $X^1\Sigma_g^+ \rightarrow A^1\Sigma_u^+$ of Na_2 Transition Dipole Moment by Autler Townes Splitting: Comparison of Three and Four Level Excitation Schemes PENG QI, Temple University, ANNIE HANSSON, Stockholm University, TEODORA KIROVA, Temple University, LI LI, Tsinghua University, ANGELOS LAZOUDIS, ERGIN AHMED, Temple University, SYLVIE MAGNIER, Universite Rennes, A. MARJATTA LYYRA, Temple Uniiversity, JIANBING QI, Pennsylvania State University Berks, ANNIE HANSSON COLLABORATION, JIANBING QI COLLABORATION, LI LI COLLABORATION, SYLVIE MAGNIER COLLABORATION — We have demonstrated that narrow band CW lasers associated with moderate Rabi frequencies can be used to study coherence effects such as Electromagnetically Induced Transparency and Autler-Townes splitting in open molecular systems. These effects can be used to control molecular angular momentum alignment and to achieve magnetic sub level state selectivity. In this paper we use Autler Townes splitting to investigate the transition dipole moment between the molecular ground state and the first excited state of the sodium dimer with the cascade and inverted Y excitation schemes. Results are compared with ab initio calculations.

A. Marjatta Lyyra
Temple University

Date submitted: 28 Jan 2005 Electronic form version 1.4