

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Progress Towards Ion Trap Piezo Coupling¹ K. WRIGHT, K.G. JOHNSON, K. COLLINS, C. MONROE, Univ of Maryland-College Park — We report our current experimental progress towards coupling a macroscopic piezoelectric element to an ion. Current progress is being made using a four-rod Paul trap and a 1mm cube piezo made of PZT. By tuning the secular frequency of a trapped Yb ¹⁷¹ ion near the resonant motional eigenmode of the piezo, we should see an increase in the coupling between the two objects. We hope to see this coupling through observation of a peak in the ion heating rate as a function of ion secular frequency and distance to the piezo.

¹This work is supported by the AFOSR MURI on Quantum Transduction.

Kenneth Wright
Univ of Maryland-College Park

Date submitted: 27 Jan 2015

Electronic form version 1.4