

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Absolute in-situ calibration piezoelectric quartz tuning fork force Sensors. SANJAY BIDASARIA, Georgia Tech, ALEXEI MARCHENKOV, Georgia Tech., MARCHENKOV GROUP TEAM — A method has been developed for absolute calibration of piezoelectric quartz tuning forks for use as force sensors with nano-newton resolution. The performance of the forks in a cryogenic environment is investigated. The mechanical properties of the forks are extracted from the frequency dependent admittance and compared to the exact model of a vibrating cantilever in a helium atmosphere. The method is verified by simultaneous application of calibrated point loads to the cantilever in vacuum.

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Date submitted: 27 Nov 2007

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