The stochastic dynamics of micron and submicron scale mechanical oscillators MARK PAUL, Virginia Tech, MATTHEW CLARK, Virginia Tech — The stochastic response of micron and submicron scale oscillators of arbitrary geometry immersed in a viscous fluid will be discussed. It will be shown that by using the fluctuation-dissipation theorem it is possible to calculate, in a straight forward manner, the stochastic dynamics that would be measured in experiment through deterministic calculations of the fluid and solid equations. This approach is used to investigate the motion of single and multiple oscillators for a variety of experimentally realistic geometries.

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