

Abstract Submitted
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On the Energy Transfer Performance of Mechanical Nanoresonators Coupled with Electromagnetic Fields: Applications with magnetic nanoparticles H. JAVAHERI, B. BARBIELLINI, G. NOUBIR, Northeastern University — The energy transfer performance in electrically and magnetically coupled mechanical nanoresonators is studied [1]. Using the resonant scattering theory, we show that magnetically coupled resonators can achieve the same energy transfer performance as for their electrically coupled counterparts, or even outperform them within the scale of interest. Magnetic and electric coupling are compared in the *Nanotube Radio*, a realistic example of a nano-scale mechanical resonator. The energy transfer performance is discussed for magnetic coupling in magnetite (Fe_3O_4) nanoparticles.

[1] H. Javaheri, B. Barbiellini, G. Noubir, arXiv:1108.0633.

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