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Microwave Nano-abacus Electro-mechanical Oscillator HAIBING PENG, C.W. CHANG, S. ALONI, T.D. YUZVINSKY, A. ZETTL, UC Berkeley — We describe nanoscale electromechanical oscillators capable of operating in ambient-pressure air at room temperature with unprecedented fundamental resonance frequency of ∼4 GHz. The devices, created from suspended carbon nanotubes loaded abacus-style with inertial metal clamps yielding short effective beam lengths, open windows for immediate practical microwave frequency nanoelectromechanical systems (NEMS) applications.

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