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**High frequency properties of a CNT-based nanorelay** JARI KINARET, MAGNUS JONSSON, TOMAS NORD, SVEN AXELSSON, Department of Applied Physics, Chalmers U. Tech and Goteborg U., Gothenburg, Sweden, SUSANNE VIEFERS, Department of Physics, University of Oslo, Oslo, Norway —
We investigate theoretically the high frequency properties of a carbon-nanotube-based three-terminal nanoelectromechanical relay. The intrinsic mechanical frequency of the relay is in the GHz-regime, and the electromechanical coupling shows a non-linear resonant behavior in this frequency range. We show that the electromechanical resonant frequencies can be tuned by a bias voltage, and discuss how the device may be used as a tunable HF filter or a voltage-controlled oscillator.

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