

PHASE-LOCKING EFFECT IN ONE-DIMENSIONAL AND TWO-DIMENSIONAL ARRAYS OF SPIN-TORQUE NANO-OSCILLATORS

In this paper we numerically study the phase-locking effect in one-dimensional (1-D) and two-dimensional (2-D) arrays of spin-torque nano-oscillators (STNOs) consisting various number of oscillators (2 and 4). Our calculation results show that the efficiency of STNO synchronization depends on the geometry of oscillator array and the spread of oscillator eigenfrequencies. In particular linear STNO array could be rather easily phase-locked for the case of almost identical STNOs, while STNOs having a large spread of eigenfrequencies are better synchronized if they organized in 2-D arrays.

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