棚本研究室 論文発表

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題名	Reservoir Computing on Spin-Torque Oscillator Array
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概要	We numerically study reservoir computing on a spin-torque oscillator (STO) array, describing the magnetization dynamics of the STO array by a nonlinear oscillator model. The STOs exhibit synchronized oscillation due to coupling by magnetic dipolar fields. We show that reservoir computing can be performed using the synchronized oscillation state. The performance can be improved by increasing the number of STOs. The performance becomes highest at the boundary between the synchronized and disordered states. Using an STO array, we can achieve higher performance than that of an echo-state network with a similar number of units. This result indicates that STO arrays are promising for hardware implementation of reservoir computing.