

Séminaire du SPEC
Mercredi 7 juin 2006, 11h00

Bt. 774 - Salle Claude ITZYKSON
Centre d'Etudes de Saclay, Orme des Merisiers
91191 Gif-sur-Yvette

Accueil café 15 minutes auparavant

**Theory of Mutual Phase-Locking of Spin Torque
Nano-Oscillators**

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Theory of mutual phase-locking of a pair of generating magnetic nano-contacts driven by spin-polarized current is developed using the general theory of coupled nonlinear oscillators.

The expressions for the phase-locking band and for the frequency of phase-locked oscillations are derived and compared to experiments. It is shown, that in typical experiments, where separation a between the nano-contacts lies in the interval $0.2 \mu\text{m} < a < 1.5 \mu\text{m}$, the coupling between the nano-contacts leading to the phase-locking effect is mainly caused by the propagating spin waves radiated into the common "free" layer, rather than by the direct magneto-dipole interaction.

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