

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Detection of quantum entanglement using cross-correlation spin noise spectroscopy DIBYENDU ROY, Max Planck Institute for the Physics of Complex Systems, NIKOLAI A. SINITSYN, Theoretical Division, Los Alamos National Laboratory — Nature of spin-spin correlations between two interacting spin subsystems in thermal equilibrium can be probed using cross-correlation spin noise spectroscopy [1] with two linearly polarized off-resonant laser beams of different wavelength. Here we propose to use such cross-correlator of spins to detect and quantify quantum correlations such as quantum entanglement between the spin subsystems. We demonstrate our proposal for interacting quantum dots.

[1] D. Roy, L. Yang, S. A. Crooker, N. A. Sinitsyn, arXiv:1408.5399

Dibyendu Roy
Max Planck Institute for the Physics of Complex Systems

Date submitted: 04 Nov 2014

Electronic form version 1.4