Contribution ID: **124** Type: **Poster**

【846】Magnetic correlations in artificial 2D XY spin systems

Wednesday 23 August 2017 12:44 (1 minute)

Correlations in low-dimensional magnetic systems result in interesting properties, especially if continuous spin degrees of freedom are involved. Here we observe the magnetic correlations of dipolar-coupled artificial XY moments (circular nanomagnets) on a square lattice as a function of temperature using low-energy muon-spin relaxation. For strong interactions between the nanomagnets, we observe the onset of slow collective dynamics below a tunable critical temperature. In contrast, the dynamics in weakly-interacting systems is described by the blocking of individual nanomagnets which happens at considerably lower temperatures.

Authors: LEO, Naëmi (Paul Scherrer Institute); HOLENSTEIN, Stefan (Paul Scherrer Institute); SCHILD-KNECHT, Dominik (Paul Scherrer Institute); SENDETSKYI, Oles (Paul Scherrer Institute); DERLET, Peter (Paul Scherrer Institute); LUETKENS, Hubertus (Paul Scherrer Institute); LEE, Stephen (St. Andrews University, St. Andrews, Scotland); HEYDERMAN, Laura (ETH Zurich - Paul Scherrer Institute)

Presenter: LEO, Naëmi (Paul Scherrer Institute)

Session Classification: Poster Session

Track Classification: Magnetism and Spintronics at the Nanoscale