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Magnetism in $NaYb_{1-x}Lu_xO_2$

We report μSR measurements on the layered triangular system $NaYb_{1-x}Lu_xO_2$ with x = 0.05 and 0.15. We find the quantum disordered ground state [1,2] to be robust and insensitive to magnetic dilution, and exhibiting persistent spin dynamics down to the lowest temperature studied (T = 0.25 K). Indeed, the low temperature muon response is nearly identical to that found for undiluted $NaYbO_2$ [2]. We find no evidence for magnetic inhomogeneity, and based on low-temperature longitudinal field studies we propose that our results are best interpreted assuming a magnetically uniform ground state characterized by a cutoff power law spin autocorrelation function.
[1] M. Bordelon et al., Nature Physics **15**, 1058 (2019).
[2] L. Ding et al., Phys. Rev. B **100**, 144432 (2019).

Email

grafm@bc.edu

Funding Agency

Supervisors Name

Supervisors Email

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No

Primary author: GRAF, Michael (Boston College)

Co-authors: BERLIE, Adam (STFC Rutherford Appleton Laboratory); WILSON, Stephen (University of California Santa Barbara); GOMEZ ALVARADO, Steven (University of California Santa Barbara)

Presenter: GRAF, Michael (Boston College)

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