µSR Study on Triangular Lattice Spin Liquid Candidate NaYbSe2

Z-H. Zhu¹, Y-X. Yang¹, C-S. Chen¹, B-L. Pan¹, Q. Wu¹, C. Tan¹, Z-F. Ding¹, P. K. Biswas², A. D. Hillier², S-Y. Li^{1,3}, L. Shu^{1,3}

¹State Key Laboratory of Surface Physics, Department of Physics, Fudan University, Shanghai 200433, People's Republic of China

²ISIS Facility, Science and Technology Facilities Council Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Chilton, Didcot OX11 0QX, UK

³Collaborative Innovation Center of Advanced Microstructures, Nanjing 210093, People's Republic of China

Triangular lattice spin liquid candidate NaYbSe $_2$ has a simple structure and is free of exchange disorder in YbMgGaO $_4$. The specific heat and magnetic susceptibility measurements show that there is no phase transition down to 50 mK. Our zero field and longitudinal field μ SR experiments on single crystalline samples prove the absence of magnetic order. It also suggests that there is persistent spin dynamics down to 88 mK, while we also observe spin freezing below 6 K. It is possible that there is spin glass "impurities" in this spin liquid system.