

22 Dec      Wednesday      12:45 – 1:30

Chair: YOU Jian Qiang (游建强)

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**Einstein-De Haas Effect of Topological Magnons**

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Professor YAO Dao-Xin (姚道新), Sun Yat-Sen University, China

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Professor YAO Dao-Xin is a Professor in School of Physics at Sun Yat-sen University, where he has been since 2009. From 2016 to 2020, he served as Deputy Dean. He received his B.S. and M.S. from Zhejiang University. He obtained his Ph.D. in condensed matter physics at Boston University in 2007. Then he worked at Purdue University, University of Tennessee and Oak Ridge National Lab. In 2009, he joined Sun Yat-sen University as a full professor in Guangzhou. He is mainly working on condensed matter theory and computational physics, including correlated electron systems, quantum magnetism, quantum phase transitions, topological materials, and quantum information. He is the author of over 120 papers.

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**Abstract:**

We predict the existence of the Einstein-de Haas effect in topological magnon insulators. Temperature variation of angular momentum in the topological state shows a sign change behavior, akin to the low temperature thermal Hall conductance response. This manifest itself as a macroscopic mechanical rotation of the material hosting topological magnons. We show that an experimentally observable Einstein-de Haas effect can be measured in the square-octagon, the kagome, and the honeycomb lattices. Albeit, the effect is the strongest in the square-octagon lattice. An experimental set up is proposed to detect the theoretical predictions. Ref: Phys. Rev. Research 3, 023248(2021).