

Speaker: Dr. Zhu-Xi Luo

Time: 11:00am-12:00pm

Location: Whitaker Biomedical Engineering 1103

Title: Constructive approaches to frustrated magnetism: Moiré and Measurements

Abstract: Frustrated magnetism arises when spins interact through competing exchange interactions which cannot be simultaneously satisfied. When the frustrations are strong enough, exotic states can emerge such as long-range entangled spin liquids. Unfortunately, solid state materials are complicated and frustrations are hard to control: To this date, quantum spin liquids are still challenging to be realized in experiments. Naturally, researchers turn to more manageable experimental systems, in the hope of engineering frustrated magnetism constructively. I will discuss my recent works on spin liquids in two types of such manageable systems: moire heterostructures in van der Waals materials where many tuning knobs are available; and monitored quantum circuits where designer gates and measurements are exploited as new sources of frustrations.

Bio: Zhu-Xi received her B. S. in Economics at Fudan University in China. From 2014-2019 he did her Ph. D. in physics at the University of Utah. Between 2019-2022 she was a postdoc at the Kavli Institute for Theoretical Physics, University of California, Santa Barbara. In September 2022 she joined Harvard University as a postdoc. Her research is centered around discovering, understanding, and realizing exotic states of matter.