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【609】 High-pressure phases of Kitaev Materials

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Bond-dependent interactions between magnetic moments can lead to strong frustration and nontrivial ground states. In particular, the Kitaev-Heisenberg model has a rich phase diagram and can host a spin liquid state or different frozen states depending on the strength of the additional Heisenberg interactions. Experimentally such phase diagrams can be explored by modifying the relative interaction strengths in materials by applying pressure.

In this presentation I will describe how the muon spin rotation technique can be used to study such materials under applied pressure and what it can reveal about the transitions between different phases. I will then show examples of our recent high-pressure studies in Kitaev candidate materials $\alpha\text{-Na}_2\text{IrO}_3$, $\beta\text{-Li}_2\text{IrO}_3$ and $\alpha\text{-RuCl}_3$.

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