



University of Stuttgart
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Universität Stuttgart
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Frustrated Iridates as Candidate Quantum Spin Liquids

It has long been recognized that strong quantum fluctuations may inhibit long range magnetic ordering and give rise to a paramagnetic ground state. A special class of quantum paramagnets, known as quantum spin liquids (QSL), have been attracting tremendous theoretical and experimental attention.

While materials like Li_2IrO_3 and Na_2IrO_3 were experimentally found to order magnetically at low temperatures, the recently synthesized $\text{H}_3\text{LiIr}_2\text{O}_6$ does not show any magnetic ordering down to 1K and therefore represents a promising candidate for a topological QSL.

To clarify the reasons why a QSL behavior can be stabilized in $\text{H}_3\text{LiIr}_2\text{O}_6$, a detailed structural, magnetic and electronic understanding of the aforementioned iridates is necessary.