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# A quantum liquid of magnetic octupoles on the pyrochlore lattice

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The search for spin liquid ground states in frustrated magnets has held a considerable place in condensed matter physics over the last decades as it represents a large playground for both theoreticians and experimentalists [1-3].
Quantum Spin Liquids (QSLs) have been and still are of particular interest as they evade long-range magnetic order down to zero temperature, being instead characterized by emergent gauge fields and fractionalized quasiparticle excitations [4-6].
The Ce2Sn2O7 pyrochlore stands as a serious candidate for the realization of a special type of QSL –the octupolar quantum spin ice [7].
Using macroscopic as well as microscopic probes, the dipolar-octupolar nature of the degrees of freedom was found. This led to substantial efforts aiming at isolating and characterizing the type of correlations developing below 1 Kelvin in Ce2Sn2O7, the results demonstrating that a quantum liquid of magnetic octupoles forms, in agreement with the octupolar quantum spin ice scenario.

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## Position

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