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Analysis of thermal Hall conductivity in a kagome lattice antiferromagnet using a tensor network method

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Although kagome lattice antiferromagnets are expected to host a wealth of quantum phases, many aspects of their physical properties remain unresolved, requiring further investigation. In this poster, we focus on the thermal Hall conductivity, which contains information about quasiparticle excitations, and report finite-temperature results obtained with tensor-network methods. In particular, we show that within the 1/9-magnetization plateau region, the thermal Hall conductivity changes sign, revealing a striking heat-transport anomaly that points to the emergence of an exotic quantum state.

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