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Functional Spin RG for Rydberg Array Spin Hamiltonians

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Rydberg-Atom arrays are a versatile platform to simulate interesting physics from spin liquids to lattice gauge theories. We develop a one-loop functional renormalization group approach based on Kitaev's pseudo-Majorana spin representation that produces quantitative accurate data for Rydberg type Hamiltonians at finite temperature. By using the convenient symmetries of the Majorana representation, treatment of magnetic fields becomes feasible. The implementation of infinite lattices with long-range interactions and complicated lattice geometries is straightforward.

Presenter: SCHNEIDER, Benedikt**Session Classification:** Poster