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A Dichotomy of the Spin Liquid and the Correlated Impurities in Herbertsmithite

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It is debatable whether RVB spin liquids exist in kagome systems. Enthusiasm in spin-1/2 kagome antiferromagnets gained extra momentum from the observation of a spinon continuum in ZnCu3(OD)6Cl2 (herbertsmithite). In low-energy limit, where insightful many-body theories exist, impurities complicate experimental interpretations. Two important progresses were made in the past year. Single-crystalline 17O NMR experiment provided evidence for pristine kagome layers and a spin gap. Below the spinon continuum's energies, neutron scattering measurements revealed 3 dimensional spin correlations, which likely originate from the impurities. I will present the intrinsic-extrinsic dichotomy in ZnCu3(OD)6Cl2 as well as my thoughts on future directions.