

DAMOP17-2017-000560

Abstract for an Invited Paper
for the DAMOP17 Meeting of
the American Physical Society

Finite-range interactions and cluster Bose metals

GUIDO PUPILLO, University of Strasbourg

Quantum phases of matter are usually characterised by broken symmetries. Identifying physical mechanisms and microscopic Hamiltonians that elude this paradigm is one of the key challenges in many-body physics. In this talk we discuss a robust mechanism for the realization of a Bose metal, an example of phase breaking no symmetries, for particles with simple two-body finite-range interactions and discuss how the latter may be engineered with Rydberg gases. This may open the way to the observation of spin-liquid type behaviour in artificial quantum materials.