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Title: **Atomic Bose-Bose mixtures for quantum magnetism**

Quantum magnetism with ultracold atoms in optical lattices is emerging as a way to realize experimentally simple lattice spin models. The regime of strong correlations can be easily reached and intense experimental research is underway mostly with fermionic systems. It is well-known, however, that the two-species Bose-Hubbard model, describing a mixture of two bosonic components in an optical lattice, is also mapped to a spin Hamiltonian. At LENS Florence, we aim to study the phase diagram of the derived XXZ Heisenberg model in an experiment combining two different bosonic species, K41 and Rb87. I will describe the predicted quantum phases for our particular mixture, the experimental progress on the route to the exploration of these quantum phases and the major issues ahead.