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Abstract for an Invited Paper
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Ultracold SU(N) fermions in an optical lattice with controlled symmetry breaking

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I will discuss recent experiments with interacting multicomponent ^{173}Yb fermions in optical lattices. I will focus on the realization of interacting SU(N) Fermi-Hubbard systems, where the addition of a coherent laser coupling between different spin states is used to induce a controlled breaking of the SU(N) global interaction symmetry. This explicit symmetry-breaking action is shown to favour Mott localization and determines the onset of a state-selective behavior. I will discuss the experimental results and the connection with the physics of strongly correlated materials, where a similar orbital-selective behavior arises from coupling between different orbitals.