

# On superconducting stripes of the two-dimensional Hubbard model

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The intertwining of spin-, charge-, and pair-density waves embedded in a uniform  $d$ -wave superfluid background is highlighted in the strongly correlated regime of the two-dimensional Hubbard model. As the lattice filling increases, this striped phase emerges from homogenous states exhibiting spiral magnetism and evolves towards a doped antiferromagnet. A concomitant enhancement of long-ranged  $d$ -wave pairing correlations is also found. Our variational results are obtained by mixing unrestricted Hartree-Fock and BCS wave-functions with symmetry restoration before variation. It will also be shown that the approach is exact for a four-site cluster, and that it compares very favorably against existing exact results or numerical simulations.