

Abstract Submitted
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Tunneling-driven transitions in magnetization compressibility and density redistributions in a fermionic superfluid of cold atoms trapped in an array of one-dimensional tubes KUEI SUN, C.J. BOLECH, University of Cincinnati — We study two-species fermion gases with attractive interactions in optical lattices that are made as an array of one-dimensional tube confinements. With the decrease in lattice depth, we find that the increase in tunneling between tubes leads to an incompressible-compressible transition in magnetization. The role of pair tunneling is considered, as well as the experimental implications.

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