

Abstract Submitted
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Excitation spectrum and effective interactions of highly-elongated Fermi gas¹ D. BLUME, D. RAKSHIT, Washington State University — Full 3D calculations of small two-component Fermi gases under highly-elongated confinement, in which unlike fermions interact through short-range potentials with variable atom-atom s-wave scattering length, are reported. The 3D excitation frequencies are compared with those determined from atomic and molecular 1D model Hamiltonian. Our numerical results suggest that the effective 1D atom-dimer and dimer-dimer interactions are to a good approximation determined by simple analytical expressions. Implications for the description of quasi-1D Fermi gases within strict 1D frameworks are discussed.

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