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**Correlated Fermions from Ultra-Cold Atomic Gases to Nuclear Matter**

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Even in heavy neutron-rich nuclei, electron-induced nucleon knockout measurements show high momentum nucleons predominantly belong to short-range correlated neutron-proton pairs. Despite a 20-order of magnitude difference in density, the strength and shape of this high-momentum distribution are remarkably similar to those of ultra-cold atomic gases of two different fermions which can be described by Tan's contact. Furthermore, in neutron-rich nuclei, protons have a greater probability than neutrons to have momentum greater than the Fermi momentum. This has wide ranging implications from the nuclear symmetry energy to quark distributions in nuclei.