Nematic order in correlated electron systems

Nematic order and nematic correlations in two-dimensional metallic electron systems attract increasing interest among theorists and experimentalists. A nematic state is characterized by a spontaneously broken orientational symmetry, in the absence of a broken translation invariance. It can be formed via partial melting of stripe order in a doped Mott insulator, or via a Pomeranchuk instability generated by forward scattering interactions in a normal metal. Evidence for nematic order or strong nematic correlations has been observed in several layered correlated electron compounds. Order parameter fluctuations close to a continuous nematic quantum phase transition give rise to a peculiar non-Fermi liquid metal.