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Excitations of a Fermi fluid with coupled magnetic and nematic order parameters PENGTAO SHEN, KHANDKER QUADER, Department of Physics, Kent State University, Kent, OH 44242 — We study possible stable phases of 2D and 3D Fermi fluids with coupled magnetic and nematic order parameters by considering appropriate Ginzburg-Landau free energies, and performing necessary minimizations. In Fermi liquid language, nematic order corresponds to L=2 distortions of the Fermi surface, so here we consider such distortions in a magnetically ordered Fermi fluid. We use Landau kinetic equation to study propagating collective modes and corresponding dispersions of the modes.

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