Commensurate and incommensurate SDW and the superconducting dome in heavy electron systems$^1$ PEDRO SCHLOTTMANN, Florida State University — A nested Fermi surface together with interactions between the carriers may give rise to itinerant AF. We consider an electron and a hole pocket, separated by a wave vector $Q$, and Fermi momenta $k_{F1}$ and $k_{F2}$, respectively. The order is gradually suppressed by increasing the mismatch of the Fermi momenta and a QCP is obtained as $T_N \to 0$. If $Q = G/2$ (Umklapp), pairs of electrons can be transferred between the pockets. This process may lead to superconductivity and we investigate the conditions for a superconducting dome above the QCP [1]. If $Q \neq G/2$ eight phases need to be considered: commensurate and incommensurate SDW and CDW and four superconductivity phases, two of them with space modulated order parameter of the FFLO type with wave number $|Q - G/2|$. The RG equations are studied and a phase diagram with re-entrant SDW is obtained [2].


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