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The phase diagram of imbalanced Fermi gases¹

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Recent experimental and theoretical research has focused on the phases of strongly interacting Fermi gases under an imposed population imbalance between the fermion species. The large difference in chemical potential between the majority and minority species disrupts conventional singlet s-wave pairing, yielding a rich phase diagram including regions of phase separation, Fulde-Ferrell-Larkin-Ovchinnikov superfluidity and magnetic superfluidity. I will discuss these predicted phases, as well as the behavior at large imbalance where the minority species can induce an effective attraction among the majority fermions and a resulting instability towards p-wave superfluidity.

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