



Condensed Matter Theory Center

Seminar

Andrew James
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Friday, January 22
11:00 AM-12:30 PM
2202 Physics Building

“Non-Fermi liquid fixed point for an imbalanced gas of fermions in $1+\epsilon$ dimensions”

We consider a gas of two species of fermions with population imbalance. Using the renormalization group in $d=1+\epsilon$ dimensions, we show that for spinless fermions and $\epsilon > 0$ a fixed point appears at finite attractive coupling where the quasiparticle residue vanishes, and identify this with the transition to Larkin--Ovchinnikov--Fulde--Ferrell order (inhomogeneous superconductivity). When the two species of fermions also carry spin degrees of freedom we find a fixed point indicating a transition to spin density wave order.