

Quantum Phase Transitions in Two Dimensional Helium Films

John Saunders

Royal Holloway University of London, Egham TW20 0EX Surrey, UK

We discuss recent experiments on two dimensional helium films adsorbed on graphite, which provide simple model systems to study quantum criticality. The continuous “tuning parameter” is either density or “van der Waals pressure”. Examples include: the Mott-Hubbard transition of a ^3He monolayer; ^3He bi-layer film – a two band heavy fermion system with quantum criticality; superfluid-Mott insulator transition in ^4He films.