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Sommerfeld Theory Colloquium

Prof. Gergely Zarand

Technical University of Budapest

Color superconductivity and "baryons" in optical lattices

In my talk I will first review how correlated and exotic states of matter can and have been realized in a controlled way using ultracold atomic systems. I will review, in particular, recent experiments on the Mott transition observed in optical lattices, degenerate Fermi systems, and superconductors. I will then discuss how "color superconductivity" and SU(2) superconductors could be realized in these systems, and will also show how the optical analogue of color-superconductor - baryon phase transition shows up in three-component Fermi systems. Contrary to QCD, where the two phases are probably separated by a first order line, in this case the two phases are separated by a new quantum critical point.

Wednesday, 31th January 07, 11.15 h, Room 348 / 349, Theresienstr. 37 / III

Prof. J. v. Delft