GOETHE
UNIVERSITÄT
FRANKFURT AM MAIN

Fachbereich Physik
Institut für Theoretische Physik

CONDENSED MATTER THEORY SEMINAR

Subject: **Angular momentum of BCS-BEC fermionic superfluids with multiply quantized vortices**

Speaker: **Prof. Dr. Victor Gurarie (University of Colorado at Boulder)**

Date & time: **Monday, June 11th, 2018 at 2 p.m.**

Venue: **Seminar room 2.116a+b**

Angular momentum of a Bose-Einstein condensate in the presence of a quantized vortex is known to be hbar times the number of particles in the condensate. In the presence of a vortex of vorticity larger than 1, the angular momentum is then hbar times the vorticity times the number of particles. This obviously also works in the far BEC regime of the BCS-BEC fermionic superfluid with a vortex, where the angular momentum is hbar times the vorticity times the number of bosonic molecules. I will discuss how this breaks down in the BCS regime of a fermionic superfluid with vortices of vorticity larger than 1. In this case the angular momentum turns out to be significantly lower than in the BEC regime. In part this happens due to similarity of this problem to the problem of angular momenta in topological superconductors.