Speaker: **Caroline Stier, University of Freiburg**

Title: **Quantum chaos and integrability in partially distinguishable fermions on a 1D lattice**

Date: **Friday, November 14th, 11:00 am (s.t.).**

Place: **Seminar room 915**

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We study the fermionic many-body quantum dynamics generated by a Hubbard-like Hamiltonian with nearest neighbour interaction that is agnostic to the particles' species. For not strictly indistinguishable fermions, distinct invariant symmetry sectors of the many-body Hilbert space are populated, with tangible impact on the many-body dynamics. For indistinguishable fermions, the dynamics is integrable; for partially distinguishable fermions, however, numerical results show the emergence of chaotic dynamics. We explain the breakdown of integrability with analytical arguments, in tandem with simulations of the dynamics within specific symmetry sectors.