

**Colloquium**  
**Dahlem Center for Complex Quantum Systems**

**Odd frequency pairing in hybrid structures and multiband superconductors**

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**Time:** Tuesday, September 23<sup>rd</sup>, 2014, 15:00 c.t.

**Location:** Hörsaal A (1.3.14)

**Abstract:**

Odd frequency superconductivity proved to be an elusive state that is yet to be observed as a primary pairing state. On the other hand the list of systems and structures where odd frequency can be present as an induced component is growing. I will review various scenarios pointing to emergence of odd frequency pairing due to modifications of the primary conventional pairing. Recently we find that odd frequency component is ubiquitously present in multiband superconductors. We show that odd-frequency superconducting pairing requires only a finite band hybridization, or scattering, and non-identical intraband order parameters, of which only one band needs to be superconducting. From a symmetry analysis we establish a complete reciprocity between parity in band-index and frequency. I will also discuss extensions of the odd frequency superconductivity to the spin and boson systems.