Speaker: **Christoph Dittel (University of Freiburg)**

Title: **The emergence of spacetime and relativistic quantum dynamics on complex manifolds**

Date: **Tuesday, December 19th, 11 o‘clock (s.t.)**

Place: **Seminar room 915**

The emergence of spacetime and relativistic quantum dynamics on complex manifolds

The quantum mechanical evolution of the universe is formulated as a parametrized path through a large but finite-dimensional complex topological manifold. By considering an observer's time with respect to a small embedded principal system to emerge through the measurement of the remaining degrees of freedom, an evolution equation is derived that encompasses Schrödinger's equation, and additionally suggests the presence of (anti)matter that remains uncoupled to usual matter. When additionally measuring the principal system's spatial degrees of freedom, Klein-Gordon's equation as well as Dirac's equation are recovered. It is speculated about the connection to the theory of general relativity.