# MP 15: HV Verch: Quantum Information

Time: Thursday 14:00–14:30 Location: H-HS VII

**Invited Talk** MP 15.1 Thu 14:00 H-HS VII

**The D-CTC condition is generically fulfilled in classical (non-quantum) statistical systems** — Jürgen Tolksdorf[1] and •Rainer Verch[2] — [1]MPI für Mathematik i.d. Naturwissenschaften, Leipzig — [2]Institut für Theoretische Physik, Universität Leipzig

The D-CTC condition, introduced by David Deutsch as a condition to be fulfilled by analogues for processes of quantum systems in the presence of closed timelike curves, is investigated for classical statistical (non-quantum) bi-partite systems. It is shown that the D-CTC condition can generically be fulfilled in classical statistical systems, under very general, model-independent conditions. The central property used is the convexity and completeness of the state space that allows it to generalize Deutsch's original proof for q-bit systems to more general classes of statistically described systems. The results demonstrate that the D-CTC condition, or the conditions under which it can be fulfilled, is not characteristic of, or dependent on, the quantum nature of a bi-partite system. (See arXiv:1912.02301)