Speaker: Ingo RUNKEL (University of Hamburg, Germany)

Title: Non-semisimple topological field theories and manifold invariants

Abstract: Starting from a possibly non-semisimple ribbon category together with a modified trace on a tensor ideal, one can define surgery invariants of three-manifolds with certain embedded ribbon graphs. If the ribbon category is modular and the ideal is that of projective objects, these invariants extend to a three-dimensional TFT on so-called admissible bordisms. This TFT produces Lyubashenko's modular functor, and it agrees with the Reshetikhin-Turaev TFT if the input category is semisimple.

This is joint work with J. Berger, M. De Renzi, A. Gainutdinov, N. Geer, and B. Patureau-Mirand.