Oberseminar Topologie: 20.05.2019

Mehran Seyedhosseini (Universität Göttingen)

„Around the Relative Index.“

Abstract:
In the first part of the talk, I will recall some concepts from coarse geometry and higher index theory. This is followed by a discussion of the relative index map of Chang, Weinberger and Yu and the relative index of Dirac operators on manifolds with boundary.
In the second part, I will discuss the relationship between the relative index and absoulte indices defined in the presence of positive scalar curvature (psc) at the boundary. This relationship can be used to give a conceptual proof of the fact that the relative index is an obstruction to the existence of a psc metric.
Finally, I will sketch how one can define secondary invariants associated to psc metrics on manifolds with boundary.