

Oberseminar Topologie: 09.11.2022

Markus Land (LMU München)

Title: On the K-theory of pushouts

Abstract: I will report on joint work with Tamme. In the first part of the talk, I will recall an earlier theorem of Tamme and mine about (the failure of) excision in K-theory, and some of its applications. The main motivation of our new work was to find an explicit formula for a ring spectrum (the circle-dot ring) which appears in this earlier work. Our new theorem says that this circle-dot ring is often a pushout in associative algebras. I will present some examples where the circle-dot ring can consequently be calculated nicely. Our theorem also implies a general formula for the K-theory of pushouts which I will focus on for the remaining parts of the talk. In specific cases of interest (e.g. group rings of amalgamated products of groups) this naturally leads us to questions about the K-theory of coconnective ring spectra - these questions have since been answered by Burklund—Levy, and I will indicate how their work interacts with ours.