

Speaker: **Robert Yuncken**

Title: **Index Theory for  $SL(n, \mathbb{C})$**

Abstract

When working on homogeneous spaces, differential and pseudodifferential operators can often be analyzed using representation theory. For instance, a beautiful construction of Bernstein, Gelfand and Gelfand from the 1970's shows how to produce cohomological complexes for complete flag manifolds of semisimple groups in this way. In later decades, analogous constructions in K-homology appeared in proofs of the Baum-Connes Conjecture, due to Kasparov and Julg, for rank-one semisimple groups. The purpose of this talk will be to describe a method for making such constructions for the higher-rank groups  $SL(n, \mathbb{C})$ .