

# Topology Seminar

## Ningchuan Zhang

of The University of Pennsylvania will be speaking on

### Equivariant algebraic K-theory of number fields and Dirichlet L-functions

on April 10 at 4:30 in  
MIT Room 2-131

Algebraic K-groups of a number field are closely related to its Dedekind zeta function. This is illustrated by Borel's computation of their ranks and the Quillen-Lichtenbaum Conjecture proved by Voevodsky-Rost.

In this talk, I will report my work in progress with Elden Elmanto to generalize this connection to Dirichlet L-functions. The key idea is to consider equivariant algebraic K-theory of number fields with coefficients in Galois representations. Rationally, we obtain a Borel's rank theorem for Artin L-functions. For torsion subgroups of equivariant algebraic K-groups, we prove a Quillen-Lichtenbaum Conjecture for Dirichlet L-functions when the image of the Dirichlet character is cyclic of prime power. We will also discuss computations of  $RO(C_2)$ -graded  $K(1)$ -local algebraic K-groups of the Gaussian integers if time permitted.

For information, write: [jongwon1@mit.edu](mailto:jongwon1@mit.edu)