



Postgraduate Student Seminar

Projective Modules and Algebraic K -Theory

Mr. Antoine Lefebvre de Saint Germain
The University of Hong Kong

Abstract

In this first Postgraduate Seminar, we will present some of the neat ideas which arise in module theory, in particular its connections to (integral) representation theory, algebraic number theory, and topology. We will begin with a very example-focused reminder of the notions of rings and modules. Then, we will present some of the difficulties attached to understanding modules over general rings. This will justify our interest in a very specific class of modules, called projective modules. The study of these projective modules will lead us naturally to explore the lower K -groups. From here, we will be equipped to explore the connections (if time permits !):

- between these projective modules and class field theory (Rim's theorem),
- between these projective modules and topology (Serre-Swan theorem)

Date: October 11, 2018 (Thursday)

Time: 3:00 - 4:00pm

Venue: Room 210, Run Run Shaw Bldg., HKU

The idea of these postgraduate seminars is that we get to share things we have learnt, whilst getting to know one another. So even if you are not too familiar with pure mathematics, feel free to join us so we can get to know you !

If anyone is willing to give a talk, please send me an email to adsg@hku.hk, so I can make the schedule.

All are welcome