



## Spring 2009 Seminar Series



### Dr. Hari Bercovici

Professor  
Department of Mathematics  
Indiana University

**Friday, April 24, 2009**

**Time: 3:00 PM - 4:00 PM**

**Room: MS 2.02.52**

## Intersection theory and the Connes embedding problem

Recent work of Collins and Dykema shows that the Connes embedding problem (embedding countably generated finite factors in the ultrapower of the hyperfinite  $II_1$ -factor) can be reduced to a sequence of statements about sums of two selfadjoint operators. The first problem in the sequence is answered positively using intersection theory in a Grassmannian, but adapted to the factor context. This work yields explicit solutions to all intersection problems where the intersection number (also known as a Littlewood-Richardson coefficient) is equal to 1. I will try to explain these developments, and hopefully there will be time to show some of the fascinating combinatorics involved.

A reception will follow the talk and will be held in MS 2.02.52