



ALGEBRA SEMINAR TALK



WITH

MARCY ROBERTSON

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FRIDAY, NOVEMBER 4, 2011

2:30 P.M. – Middlesex College Room 107

“Introduction to derived Hall algebras”

Abstract: Roughly speaking, the Hall algebra $H(A)$ of a (small) Abelian category A is the algebra of finitely supported functions on the moduli space of objects of A (i.e., the set of isoclasses of objects of A with the discrete topology). Interest in Hall algebras exploded in the early 1990's when Ringel discovered that the Hall algebra associated to the category of F_q -representations of a Dynkin quiver Q provides a realization of the positive part of the (quantized) enveloping algebra of the (simple) complex Lie algebra associated to the same Dynkin diagram.

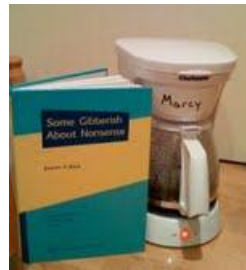
Toën and Bergner have used the theory of model categories to obtain Hall algebras on triangulated categories. In this talk we will survey these constructions and, time permitting, explain some open problems in this area which are being studied via homotopy theory.



M. Robertson



P. Hall



Fuel



C. Ringel



V. Horowitz



V. Horowitz

What a joy to again welcome Marcy Robertson and derived Hall algebras to the Algebra Seminar! After this talk, your life may change and you may be captivated by triangulated categories, their Hall algebras, and this fascinating mix of representation theory, enveloping Lie algebras and many related big ideas sprinkled with spicy and sweet observations. A talk not to be missed!