ALGEBRA SEMINAR

Heisenberg plus homotopy equals string

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ABSTRACT: The Heisenberg algebra arises in quantum mechanics as a central extension of the Lie algebra of infinitesimal translations of a symplectic vector space. I will explain how this construction can be enhanced using homotopical algebra in order to build structures called L_∞-algebras. L_∞-algebras are complexes equipped with a Lie-like bracket which only satisfies the Jacobi identity up to "coherent" chain homotopy. I will also describe how these Heisenberg L_∞-algebras can be used to study what are called "string structures" in algebraic topology. This is joint work with D. Fiorenza (Rome) and U. Schreiber (Utrecht).

MONDAY, OCTOBER 14, 2013
1:40 – 2:30 PM
ROOM 617, WACHMAN HALL
DEPARTMENT OF MATHEMATICS