Harvard-M.I.T. Algebraic Geometry Seminar

ALGEBRAIC COBORDISM AND DEGREE FORMULAS

MARC LEVINE
Northeastern

Abstract:
This is joint work with Fabien Morel. We construct a theory of cobordism for schemes of finite type over a field of characteristic zero, which has a relationship with the classical theory of complex cobordism analogous to the relation that the Chow ring has with singular cohomology. As in the classical case, the formula for the Chern class of a tensor product of line bundles gives the cobordism ring of the base field the structure of a formal group, which turns out to be the universal formal group. Thus, each formal group law gives rise to an associated algebraic theory; for example, the Chow ring and algebraic $K_0$ arise as the quotients of algebraic cobordism corresponding to the additive and multiplicative groups, respectively. As an application, we give a natural proof of the so-called degree formula, and its generalized versions formulated by Rost.

Tuesday, November 14
3:00 p.m.
MIT Room 4-163