Topology Seminar

Tom Bachmann

of MIT will be speaking on

Eta-periodic motivic stable homotopy theory

on September 16 at 4:30 in
MIT Room 2-131

(Report on work in progress, joint with Mike Hopkins.)

The geometric Hopf map $A^2 \setminus 0 \to P^1$ induces (after desuspension) a well-known stable map $\eta\colon S^{1,1} \to S^0$. Contrary to the classical situation, in motivic homotopy theory, this map is *not* nilpotent. It is thus natural to study the eta-periodic motivic stable homotopy category; this is particularly interesting/difficult locally at the prime 2.

We show that the 2-local, η-periodic sphere is the fiber of an Adams operation in the 2-local, connective Witt theory spectrum. As a consequence we recover and extend computations of Andrews, Guillou, Isaksen, Ormsby, Miller, Röndigs, and Wilson, and also compute the homotopy groups of eta-periodic algebraic special linear cobordism.

I will provide an overview of these ideas and results.

For information, write: araminta@mit.edu