

# Topology Seminar

**Kyle Ormsby**

of MIT will be speaking on

## Galois-equivariance and motivic homotopy

on December 2 at 4:30 in  
MIT Room 2-131

Let  $L/k$  be a finite Galois extension with Galois group  $G$ . In joint work with Jeremiah Heller, I construct and analyze a functor  $F_{L/k}$  from genuine  $G$ -spectra to  $P^1$ -spectra over  $\mathrm{Spec}(k)$  which agrees with the constant presheaf functor  $c$  when  $G = e$ . Marc Levine has recently proven that when  $k$  is algebraically closed of characteristic 0, (the left derived functor of)  $c$  is full and faithful on homotopy categories. I will show that when  $k$  is real closed,  $F_{k[i]/k}$  induces a full and faithful embedding of the  $C_2$ -equivariant stable homotopy category into the stable motivic homotopy category of  $k$ . In particular, there is an isomorphism between the integer-graded stable homotopy groups of the  $C_2$ -equivariant sphere spectrum and the motivic sphere spectrum over  $k$ .