Topology Seminar

Rob Thompson

of CUNY will be speaking on

An unstable change of rings for Morava E-theory

on September 21 at 4:30 in
MIT Room 2-131

The Bousfield-Kan (or unstable Adams) spectral sequence can be constructed for various homology theories such as Brown-Peterson homology BP, Johnson-Wilson theory $E(n)$ or Morava E-theory E_n. For nice spaces the E_2-term is given by Ext in a category of unstable comodules. We establish an unstable Morava change of rings isomorphism between $\mathrm{Ext}_{\mathcal{U}_{BP_*BP}}(BP_*, M)$ and $\mathrm{Ext}_{\mathcal{U}_{E_{n*}E_n}}(E_{n*}, E_{n*} \otimes_{BP_*} M)$ for unstable BP_*BP-comodules that are v_n-local and satisfy $I_nM = 0$. We show that the latter can be interpreted as Ext in the category of comodules over a certain bialgebra. This has implications for the convergence of the Bousfield-Kan spectral sequence.