Topology Seminar

Yuri Sulyma

of Brown University will be speaking on

The equivariant slice filtration on topological Hochschild homology

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

Much interaction between homotopy theory and p-adic geometry has been spurred in recent years by the work of Bhatt-Morrow-Scholze, who built a universal p-adic cohomology theory by constructing a novel filtration on topological Hochschild homology. Their construction works by flat descent to the case of perfectoid rings, where it is given by the usual Postnikov filtration. Here, work of Hesselholt (generalized by BMS) shows that THH is even polynomial on a degree 2 generator, generalizing classical Bökstedt periodicity for the case of $\mathbb{F}_p$. We study a variant, the *regular slice filtration* from equivariant stable homotopy theory. The slice filtration is again concentrated in even degrees, generated by $RO(\mathbb{T})$-graded classes which can loosely be thought of as *norms* of the Bökstedt generator. The slices themselves are $RO(\mathbb{T})$-graded suspensions of certain Mackey functors. When R is p-torsionfree, the E_2 page of the slice spectral sequence is concentrated in even degrees.