

TOPOLOGY SEMINAR

Guest Speaker: Bogdan Gheorghe
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Date: Tuesday, November 1, 2016

Time: 3:00 PM

Location: 258 Hurley Hall



Lecture Title:

Motivic fields and w_n -periodicity

Abstract

The setting of this talk is stable motivic homotopy theory over $\text{Spec } \mathbb{C}$, at $p=2$. Morel showed that η is not nilpotent in the motivic stable stems over $\text{Spec } \mathbb{C}$, by seeing it in Milnor-Witt K-theory. Since none of the motivic Morava K-theories detect η , this implies that the obvious analogue of the Nilpotence Theorem of Devinatz, Hopkins and Smith is wrong motivically. The first step towards a motivic Nilpotence Theorem is thus to construct a motivic field $K(\eta)$ that detects η . In this talk, we will show how to construct such a motivic field. In the process, an obvious pattern appears, leading to the periodicity operators w_0, w_1, \dots , conjectured by Michael Andrews. We then show how to construct the fields $K(w_n)$ as well as a Brown-Peterson spectrum wBP . If time permits, we indicate what is known about the w_n -family and formulate some conjectures about these periodic operators