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Title: Cascade Topology Seminar, Autumn 2013

Event Type: Conference-Workshop

Location:

University of Washington

Dates:

November 2-3, 2013

Topic:

Topology

Methodology:

Six one-hour lectures, along with time for informal interaction among the participants

Objectives Achieved:

Through lectures, disseminated new results on equivariant homotopy theory, knot theory, stable homotopy theory, and homological algebra. Established new connections and strengthened old ones among topologists in the region.

Scientific Highlights:

The talks: "Thick subcategories of compact R-module spectra", "Motivic stable homotopy groups of spheres", "A colored operad for string link infection", "Tate constructions and the squaring map on Hochschild homology", "Poincare duality for orbifolds in Morava K-theory", "Systems of fixed points and equivariant homotopy theory"

Organizers:

Palmieri, John, Mathematics, University of Washington

Speakers:

Ben Antieau (Washington): "Thick subcategories of compact R-module spectra" // Abstract: I will discuss recent work with David Gepner and Tobias Barthel on the problem of classifying the thick subcategories of the triangulated category of compact R-module spectra when R is an E-infinity ring spectrum. For ring spectra flat over an algebraic localization of the sphere spectrum, I will explain how to completely classify these subcategories by using a generalized form of the work of Devinatz-Hopkins-Smith. /// Man Chuen Cheng (UBC): "Poincare duality for orbifolds in Morava

K-theory" // Abstract: It was showed by Greenlees and Sadofsky that the classifying spaces of finite groups are self-dual with respect to Morava K-theory $K(n)$. Their duality map was constructed using a transfer map. I will describe the map and its generalization which would induce a $K(n)$ -version of Poincare duality for classifying spaces of orbifolds. Some examples of $K(n)$ -fundamental class and intersection product will be given. If time permits, I will explain the similarity of this duality map with that of the Spanier-Whitehead duality for manifolds from the point of view of differentiable stacks. /// Dan Dugger (Oregon): "Motivic stable homotopy groups of spheres" // Abstract: I will give an update on ongoing joint work with Dan Isaksen aimed at getting a better understanding of the groups in the title. I plan to focus on how these groups related to $\mathbb{Z}/2$ -equivariant stable homotopy groups, and on some conjectures about what happens over Spec of the integers /// Robin Koytcheff (Victoria): "A colored operad for string link infection" // Abstract: Budney recently constructed an operad which encodes splicing of knots and proved a theorem decomposing the space of (long) knots over this operad. Infection of knots (or links) by string links is a generalization of splicing from knots to links and is useful for studying concordance of knots. In joint work with John Burke, we have constructed a colored operad that encodes this infection operation. This operad captures all the relations in the 2-string link monoid. We can also show that a certain subspace of 2-string links is freely generated over a suboperad of our infection colored operad by its subspace of prime links. /// Tyler Lawson (Minnesota): "Tate constructions and the squaring map on Hochschild homology" [no abstract] /// Angelica Osorno (Reed): "Systems of fixed points and equivariant homotopy theory" // Abstract: I will describe the classical result of how to recover the homotopy theory of a G -space from the homotopy theory of its system of fixed points, and then I will describe the analogous recent result of Guillou and May for genuine equivariant G -spectra, I will then show how to use this result to construct a new equivariant infinite loop space machine, whose input data is in terms of fixed points. This is joint work with Anna Marie Bohmann.

Links:

<http://www.math.washington.edu/~palmieri/Cascade/2013/>
