Topology
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Enriched model categories and the Dold-Kan correspondence

If we start with a model category enriched in simplicial abelian groups and we normalize each hom complex, what kind of structure do we obtain? In joint work with Arnaud Ngopnang Ngompé, we show that changing the enrichment along (the right adjoint of) a weak monoidal Quillen pair results in a "weak" enriched model category. The main issue is that we lose the tensoring and cotensoring, but we retain a weak form thereof.

TYRONE GHASWALA, University of Waterloo

NATHAN KERSHAW, Western University

GEUNYOUNG KIM, McMaster University

ALEXANDER KUPERS, University of Toronto Scarborough
Mapping class groups of exotic tori

The d-dimensional torus is a topological manifold that often admits many smooth structures. How does its mapping class group (isotopy classes of diffeomorphisms) depend on the smooth structure? I will explain a partial answer to this question that appears in joint work with Bustamante, Krannich, and Tshishiku, give some geometric applications, and state some open problems.

ÇAĞATAY KUTLUHAN, University of Buffalo

DUNCAN MCCOY, Universite du Quebec a Montreal

LELAND MCINNES, Tutte Institute for Mathematics and Computing

WILLIAM MENASCO, University of Buffalo

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DORETTE PRONK, Dalhousie University

MARTINA ROVELLI, University of Ottawa

NICK ROZENBLYUM, University of Toronto

ANDREW SALCH, Wayne State University
Number theory and stable homotopy groups of spheres

This will be a short survey talk. I will sketch the basic ideas and techniques for computing stable homotopy groups of spheres, and other finite CW-complexes, by means of the group cohomology of Morava stabilizer groups, i.e., the automorphism groups

of one-dimensional formal group laws. Then I will review the cases in which such computations result in a formula which describes the orders of some part (given by a Bousfield localization) of the stable homotopy groups of some finite CW-complex, in terms of number-theoretic data: special values of an L-function, e.g. the Riemann zeta-function. This gives a compact and digestible way to describe the orders of various periodic families in the stable homotopy groups of finite CW-complexes, especially spheres.

YVON VERBERNE, Western University

C.M. MICHAEL WONG, University of Ottawa