

MIT Topology Seminar

*Monday, March 6, 4:30pm
MIT Room 2-142*

Georg Biedermann
(University of Western Ontario)

speaking on

Model structures for Goodwillie calculus

Abstract: The category of small covariant functors from simplicial sets to simplicial sets supports the projective model structure. In this paper we construct various localizations of the projective model structure and also give a variant for functors from simplicial sets to spectra. We apply these model categories in the study of calculus of functors, namely for classification of polynomial and homogeneous functors. Finally we show that the n -th derivative induces a Quillen map between the n -homogeneous model structure on small functors from pointed simplicial sets to spectra and the category of spectra with Σ_n -action. We consider also a finitary version of the n -homogeneous model structure and the n -homogeneous model structure on functors from pointed finite simplicial sets to spectra. In these two cases the above Quillen map becomes a Quillen equivalence. This improves the classification of finitary homogeneous functors by Goodwillie.

Contact email: mikehill@math.mit.edu,
tgerhard@math.mit.edu, hrm@math.mit.edu
URL: www-math.mit.edu/topology