Georg Biedermann | Universidad del Norte
Title: Generalized Blakers-Massey theorems and Goodwillie calculus in infinity-topoi

Abstract: (joint with Mathieu Anel, Eric Finster and Andre Joyal)

Acyclic classes and congruences in a higher topos are classes of maps that satisfy certain closure properties. They form the left class of two types of factorizations systems: modalities and left exact modalities. (They will be introduced in Mathieu Anel's talk.)

In the first talk we are going to discuss the role of acyclic classes and congruences in higher topos theory and their relation to work by Bousfield and Dror-Farjoun. The pushout product induces a multiplication of acyclic classes and congruences. The latter yields a construction of a generalized Goodwillie tower. Using our generalized Blakers-Massey theorem one can show that the layers of the tower are stable (in the sense that any commutative square is cartesian if and only if it is cocartesian).

In the second talk we are going to prove that the classical Goodwillie tower and Weiss' orthogonal tower are special cases of our generalized Goodwillie tower. We hope that the general nature of our construction will yield other types of calculi.