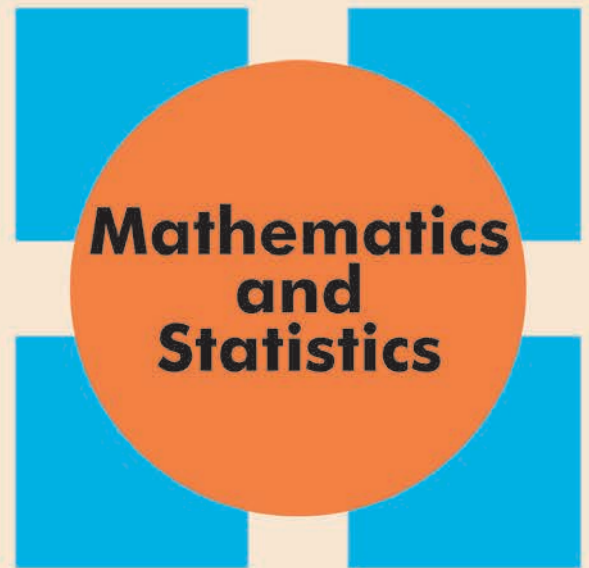


COLLOQUIUM

Najib Idrissi
ETH Zürich

Configuration Spaces and Graph Complexes



Tuesday, June 5, 2018; 10:00 - 11:00 AM; CL 410

Abstract: Configuration spaces of points are classical objects in algebraic topology that appear in a wide range of applications. Despite their apparent simplicity, they remain intriguing. Kontsevich proved in the 90's that they are intimately related to "graph complexes", combinatorial objects that can be used to explicitly describe the homotopy type of configuration spaces in a Euclidean space. After recalling the above story, I will explain a conjecture of Lambrechts and Stanley about configuration spaces of simply connected closed manifolds. I will then give an idea of the proof of this conjecture, using graph complexes similar to the ones appearing in the works of Kontsevich. I will also describe recent generalizations: for manifolds with boundary, and for so-called "framed" configuration spaces (j/w Campos, Ducoulombier, Lambrechts, and Willwacher). Finally, I will talk about applications of these results.