

DALHOUSIE MATHEMATICS COLLOQUIUM

Monday April 22 2019, 3:30 pm, Chase 319

Speaker: Pieter Hofstra
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Toposes as generalized group(oid)s

Grothendieck toposes are categories generalizing on the one hand (sheaves on) topological spaces, and on the other hand group(oid) actions. The celebrated Joyal-Tierney representation theorem makes precise a sense in which all toposes arise from a combination of taking sheaves and taking groupoid actions. However, this result relies on a non-canonical choice of covering space. In this talk (which, of course, will begin by reviewing the motivating examples of toposes and some of the basic definitions and results) we explore a more canonical approach to studying toposes in terms of group actions, namely through what we call the isotropy quotient of a topos. In particular we shall identify a class of toposes for which there is a satisfactory structure theorem, following some ideas from topos-theoretic Galois theory. This is based on joint work with Jonathon Funk.