COLLOQUIUM

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Detecting algebraic structures: K-theory and Lawvere theories

Mathematics and Statistics

Date: Friday January 22, 2021
Time: 3:30 - 4:30 PM
Zoom link:

https://uregina-ca.zoom.us/j/92508741353?pwd=UzFOMjVMelVkRWhqR215cjd6dTlCQT09

Abstract: In the 1950s and 60s, mathematicians began constructing the invariants of rings that are called "K-theory." The K-theory of rings is hard to compute, but it contains lots of interesting information about algebra, number theory, and topology. For example, K-theory detects when rings are "the same" in the sense of having suitably equivalent categories of modules, which is called Morita invariance. In this talk, I will discuss the K-theory of rings as well as new work with Markus Szymik about the K-theory of a more general kind of algebraic structure, called a Lawvere theory. In the latter case, we show that while the K-theory of Lawvere theories contains lots of interesting information, it fails to satisfy Morita invariance!

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