

Topology Seminar

Kathryn Hess

of École Polytechnique Fédérale de Lausanne will be speaking on

Galois theory: from commutative rings to E_∞ -algebras

on February 24 at 4:30 in
MIT Room 2-131

(Joint work with Magdalena Kedziorek.) In earlier work with Beaudry, Merling, and Stojanoska, we established a formal framework for homotopical Galois theory of commutative algebras in a monoidal model category, generalizing the Galois theory developed by Rognes for commutative ring spectra, which was itself inspired by that for commutative rings. We showed that it applied, in particular, to motivic spaces and spectra, providing examples of motivic Galois extensions with no classical counterpart.

In this talk I will first recall this general framework and its key properties (invariance under base change, one direction of the Galois correspondence) and establish its invariance under reasonable changes of underlying monoidal category. I will then explain how to combine this formal homotopical Galois theory with Sagave and Schlichtkrull's I -space approach to E_∞ -algebras, establishing a Galois theory of extensions of E_∞ -algebras. I will describe the properties of this theory and provide examples of Galois extensions of E_∞ -algebras.

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