ALGEBRA AND GEOMETRY SEMINAR

The Hong Kong University of Science and Technology
Department of Mathematics

Higher algebraic geometry

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The goal of this talk is to explain joint work with Scholze where we study a version of algebraic geometry which is built, not out of spectra of commutative rings, but out of spectra of symmetric monoidal higher categories. The resulting higher geometry contains the usual category of qcqs schemes, but also provides a home to new and interesting objects which cannot be studied with more classical means. In particular, I hope to explain the role that some of these objects play in ongoing work with Ben-Zvi and Nadler on various Langlands duality statements in the context of three dimensional topological field theory.

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