

# **EL $\infty$ -algebras, Generalized Geometry, and Tensor Hierarchies**

*Friday, 24 September 2021 16:45 (30 minutes)*

In this talk, I review the definition and applications of EL $\infty$ -algebras given in arXiv:2106.00108. EL $\infty$ -algebras are generalizations of L $\infty$ -algebras comprising weak Lie  $\infty$ -algebras, and they have a number of applications within extended geometry. In particular, they clarify the higher symmetry structure of generalized tangent bundles and double/exceptional field theory. They also provide the algebraic origin for data needed in the definition of higher gauge theories such as the tensor hierarchy of gauged supergravity. This Lie  $\infty$ -algebraic perspective now provides a clear path towards finite gauge transformations and a global picture of these higher gauge theories.

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