

# QUILLEN HOMOLOGY, HOMOTOPY ALGEBRAS, AND KOSZUL DUALITY FOR OPERADS

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In this talk we introduce a connected string of ideas popular in current research, focusing on the notions of (homotopy) algebraic theories, rigidification results, algebras over an operad, abelianization and Quillen homology, and connections to Koszul duality of operads. Underlying the constructions and related results is Quillen's notion of a model category which provides a useful framework for working with derived functors and resolutions. We include several examples of each concept, the ideas behind their constructions, and indicate related recent results appearing in the literature.