

# Lie algebroid extensions and action up to homotopy

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A fundamental result of Vaintrob describes Lie algebroids as Differential Graded Algebras. Following this idea, we shall explain that Lie algebroid extensions are the same as actions up to homotopy, where a Lie algebroid acts up to homotopy on another Lie algebroid. If time permits, we will describe an integration scheme for such actions up to homotopy, as well as for their morphisms.