Homotopy theory of derived A_∞-algebras

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Derived A_∞-algebras were introduced by Sagave in order to extend a classical result due to Kadeishvili on the existence of minimal models of A_∞-algebras over a field, to algebras defined over an arbitrary ring. These objects combine, via a bigrading, the notion of multicomplex with that of an A_∞-algebra. In this talk, I will use operadic machinery to relate derived A_∞-algebras with filtered A_∞-algebras. I will then discuss homotopies between morphisms of derived A_∞-algebras and explain their interplay with spectral sequences. This is a work in progress with Daniela Egas, Muriel Livernet and Sarah Whitehouse.