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The Kleisli category of a pseudomonad for chain complexes

The construction of the Kleisli category of a 2-monad acting on a 2-category is well known and mostly harmless. For each structure or axiom needed to produce such a Kleisli category, it is possible to consider a weak version. For example, one could consider bicategories rather than 2-categories, a pseudo- or lax version of the monad, or simply a weakening of axioms like associativity. Many authors have studied Kleisli constructions in the presence of one sort of weakening or another (Cheng, Gordon, Hyland, Lack, Marmolejo, Niefeld, Powers, Street are a few examples amongst many). In this expository talk, I will consider various weak constructions with an eye towards a particular example arising from the category of all abelian categories, and the chain complex monad. This example is related to joint work with Brenda Johnson and Sarah Yeakel.