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Extension creation under base change

For all flavours of category theory, the expressive power of left extensions inside a bicategory is well documented. Recall that right adjoints can be characterized in terms of left extensions. Less studied is the behaviour of left extensions under morphisms of bicategories. For example, can extensions be preserved, reflected or created by non-trivial morphisms of bicategories in “nature”? Yes, they can in the comonadic situations I shall explain. Examples will be drawn from Morita theory for DG-categories. The work involves concepts present in the following references; however the talk will not assume familiarity with those references.

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