Model-independent ∞-category theory in the homotopy 2-category

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Quillen's model category axioms provide a well-behaved homotopy category, spanned by the fibrant-cofibrant objects, in which the poorly behaved notion of weak equivalence is equated with a better behaved notion of homotopy equivalence. For many of the model categories presenting the homotopy theories of models of $(\infty, 1)$-categories, their homotopy categories can be categorified, defining a *homotopy 2-category* with certain properties. We explain how the basic category theory of ∞-*categories*, objects of some homotopy 2-category, can be developed in a model independent and to a large extent model invariant fashion by working internally to the homotopy 2-category and its associated ∞-*cosmos*.

References

[1] E. Riehl and D. Verity, *Fibrations and Yoneda's lemma in an ∞-cosmos* (2015), 1–75, arXiv:1506.05500.

[2] E. Riehl and D. Verity, *Kan extensions and the calculus of modules for ∞-categories*, in preparation.

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