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Title: Generator notions in ∞ -cosmology

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∞ -Cosmoi provide a framework in which to develop the abstract category theory of various kinds of $(\infty, 1)$ -categorical structures. In essence, an ∞ -cosmos is simply a finitely complete $(\infty, 2)$ -category, although for expository reasons they are often taken to be categories of fibrant objects enriched in the Joyal model structure. This notion is general enough to immediately encompass most of the common models of $(\infty, 1)$ -categories; quasi-categories, complete Segal-spaces, Θ_1 -spaces and such like. At the same time, it is powerful enough to develop a theory of (co)cartesian fibrations, a calculus of two-sided modules (pro-functors), Yoneda's lemma, theories of adjunction and Kan extension and so forth. Indeed, much of this theory can be developed in the setting of the (strict, classical) *homotopy 2-category* obtained from the ∞ -cosmos by applying the homotopy category construction to its hom-spaces.

In this talk we briefly recap the cosmological approach to the category theory of ∞ -categorical structures and discuss how it encompasses fibred categorical notions. This leads us naturally to the study of certain generating sets of "compact" objects in an ∞ -cosmos, a mechanism which allows us to adapt certain fibrewise arguments into the ∞ -cosmos framework.