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Sign conventions, higher supergeometry, and the two-type of the sphere

In his recent exposition of supergeometry, Kapranov outlines a philosophy that sign conventions in higher supergeometry should arise from categorical models for the truncated sphere spectrum. A model for the 1-type of the sphere is relatively easy to construct, while the 2-type has been far more elusive. I will explain why everyone's first guess for such an object cannot work, and go on to explain how a model using chain complexes of Picard categories does. This model uses a higher categorical analogue of homological algebra, and in fact demonstrates a certain universality to Kapranov's philosophy. This is joint work with Niles Johnson, Angélica Osorno, and Marc Stephan.