

# HIGHER SEGAL SPACES VIA HIGHER EXCISION

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Starting from the classical Segal spaces, Dyckerhoff and Kapranov introduced a hierarchy of what they call higher Segal structures. While the first new level (2-Segal spaces) has been well studied in recent years, not much is known about the higher levels and the hierarchy as a whole.

In this talk I explain how this hierarchy can be understood conceptually in close analogy to the manifold calculus of Goodwillie and Weiss. I describe a natural "discrete manifold calculus" on the simplex category and on the cyclic category, for which the polynomial functors are precisely the higher Segal objects. Furthermore, this perspective yields intrinsic categorical characterizations of higher Segal objects in the spirit of higher excision.