

Little disks and tangential basepoints: an invitation to logarithmic geometry

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Various maps arising in topology look like they should come from algebraic geometry, if only one could allow them to take values « at infinity ». This is the case for the little disks operad, whose underlying spaces have the homotopy type of the configuration spaces of points on the affine line, but whose operadic maps are not algebraic in any obvious way. I will explain how to solve this problem, thereby realizing Beilinson's strategy of a « purely algebraic » proof of the formality of little disks, using logarithmic geometry. Perhaps surprisingly, one needs a non-standard notion of morphism in logarithmic geometry, dubbed « virtual morphism » by Howell. That notion also allows to realize Deligne's tangential basepoints, which are crucial in Grothendieck–Teichmüller theory, as points in the categorical sense. This is joint work with Erik Panzer and Brent Pym.

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