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Clément Berenfeld- Understanding the geometry of high-dimensional data through the reach

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In high-dimensional statistics, and more particularly in manifold learning, the reach is an ubiquitous regularity parameters that encompasses the well-behavior of the support of the underlying probability measure. Enforcing a reach constraint is, in most geometric inference tasks, a necessity, which raises the question of the estimability of this parameter.

We will try to understand how the reach relates to many other important geometric invariants and propose an estimation strategy that relies on estimating the intrinsic metric of the data.

(Joint work with Eddie Aamari and Clément Levrard)