1116-28-1350 **Joshua Kaminski**, **Alexander Panchenko*** (anpanchenko@gmail.com) and **Kevin Vixie**.

L^∞-Transport and Data-Driven Partitions. Preliminary report.

The main question addressed in the talk is as follows. Given a set of N data points in the unit cube of a finite-dimensional Euclidean space, partition the cube into the union of non-overlapping sets satisfying the following requirements: (i) every set contains exactly one data point; (ii) the Lebesgue measures of the sets are equal; (iii) there is an upper bound on the diameter of the sets which converges to zero as N approaches infinity. We show that the necessary and sufficient conditions for existence of such a partition is weak-* convergence of the empirical measures associated with the data set to the Lebesgue measure. (Received September 18, 2015)