1108-49-20 **Nicolas Garcia Trillos*** (ngarciat@andrew.cmu.edu), Department of Mathematical Sciences, Wean Hall 6113, Carnegie Mellon University, Pittsburgh, PA 15213. *Continuum limit of total variation on point clouds.*

We consider point clouds obtained as random samples of a measure on a Euclidean domain. A graph representing the point cloud is obtained by assigning weights to edges based on the distance between the points they connect. We study when is the cut capacity, and more generally total variation, on these graphs a good approximation of the perimeter (total variation) in the continuum setting. We address this question in the setting of Γ-convergence. Applications to the study of consistency of cut based clustering procedures will be discussed. (Received November 11, 2014)