



פרופסור הרברט אדלסברונר

המכון למדע וטכנולוגיה, אוסטריה

Professor Herbert Edelsbrunner

Institute of Science and Technology, Austria

קולוקוויום במדעי המחשב | Computer Science Colloquium

Workshop **TOPOLOGICAL DATA ANALYSIS MEETS SYMPLECTIC TOPOLOGY** סדנה

THE MULTI-COVER PERSISTENCE OF EUCLIDEAN BALLS

Abstract

Given a locally finite set X in \mathbb{R}^d and a positive radius r , the k -fold cover of X consists of all points that have k or more points of X within distance r . The order- k Voronoi diagram decomposes the k -fold cover into convex regions, and we use the dual of this decomposition to compute homology and persistence in scale and in depth. The persistence in depth is interesting from a geometric as well as algorithmic viewpoint. The main tool in understanding its structure is a rhomboid tiling in \mathbb{R}^{d+1} that combines the duals for all values of k into one. We mention a straightforward consequence, namely that the cells in the dual are generically not simplicial, unless $k=1$ or $d=1,2$.

Joint work with Georg Osang.

The Lecture will take place on Sunday,
29 April 2018, at 11:00,
Melamed Hall (6), Shenkar Physics building,
Tel-Aviv University, Ramat-Aviv

ההרצאה תתקיים ביום ראשון,
29 באפריל 2018, בשעה 11:00,
אולם מלמד (6), בניין שנקר לפיזיקה,
אוניברסיטת תל-אביב, רמת-אביב

כיבוד קל יוגש לפני ההרצאה | Light refreshments will be served before the lecture