

## Report on my visit to Technion Haifa during June 1 – 11, 2013

During the period 1- 11 June 2013 I visited Prof. Roy Meshulam at Technion Haifa. We worked on the problem related to torsion in integral homology of random 2-dimensional simplicial complexes. These simplicial complexes have growing number of vertexes and their faces are attached at random with certain probability which is a parameter of the model. The known results do not give a full picture of what happens with the integral homology; it is only known that the one-dimensional Betti number with any fixed finite field of coefficients is trivial a.a.s. (asymptotically almost surely). A related well-known result of Gil Kalai describes the family of Q-trees contained in the 2-skeleton of a high-dimensional simplex.

During my visit Roy Meshulam and I obtained a variation of the theorem of Kalai which we hope will be useful in resolving the mystery of one dimensional integral homology. The work and our cooperation will continue via email and telephone contacts.

During my short visit I gave a talk at a seminar “Statistics and Topology” in the department of Electrical Engineering at the Technion.

Besides, during my visit I attended a conference at Tel Aviv University and had a discussion with Prof. N. Linial at the Hebrew University of Jerusalem (Department of Computer Science).

Michael Farber

University of Warwick, UK

June 12, 2014