

LARGE-SCALE GEOMETRY OF THE SADDLE CONNECTION GRAPH

Fudan Topology Seminar

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Abstract: For a translation surface, the associated saddle connection graph has saddle connections as vertices, and edges connecting pairs of non-crossing saddle connections. This can be viewed as an induced subgraph of the arc graph of the surface. In this talk, I will discuss both the fine and coarse geometry of the saddle connection graph. We show that the isometry type is rigid: any isomorphism between two such graphs is induced by an affine diffeomorphism between the underlying translation surfaces. However, the situation is completely different when one considers the quasi-isometry type: all saddle connection graphs form a single quasi-isometry class. We will also discuss the Gromov boundary in terms of foliations. This is based on joint work with Valentina Disarlo, Huiping Pan, and Anja Randecker.