Topological and Smooth Dynamics on Surfaces (individual research only)

Organized by
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ABSTRACT. Because of the pandemia, the workshop on "Topological and Smooth Dynamics on Surfaces" could not be realized in the usual format or in the new hybrid format. Instead, a subgroup of 3 participants used the week mostly for informal discussions, collaborations and research in the topic of the workshop. Namely, a study of a parametric family of planar homeomorphisms was carried out by Boroński and Štimac.

Recently a novel approach to the study of parametric families of disiaptive diffeomorphisms on surfaces was introduced by Crovisier and Pujals in their seminal paper [1], in which they initiate the study of the class of *strongly dissipative diffeomorphisms*. These maps are shown in [1] to be very close in a certain sense to 1-dimensional maps. In particular, Crovisier and Pujals showed that for any of them there exists a reduction to a 1-dimensional model, that consists of a metric tree and a continuous map on it that is semi-conjugate to the original diffeomorphism. The authors also showed that the class of strongly dissipative diffeomorphisms contains maps in the Hénon family, for an open set of parameters.

The study carried out by Boroński and Štimac at MFO attempted on generalizing the aforementioned results to a new setting. Namely, a Crovisier-Pujals-like 1-dimensional model was constructed for a Lozi family of maps [3], within the Misiurewicz parameter set [4]. This model conjugates each Lozi map in the studied parameter set to the natural extension of a continuous map on a metric tree, thus extending the earlier result to the C^0 case, but also improving semi-conjugation to a conjugacy. Further results in this direction are expected to come in a timely fashion.

The Ph.D. student Kilassa Kvaternik studied and presented the paper [2].

References

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