THE CLOSING LEMMA AND THE PLANAR GENERAL DENSITY THEOREM FOR SOBOLEV MAPS

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Abstract. In this talk a version for Sobolev-(1,p) homeomorphisms of the Closing Lemma will be presented. This result states that given a non-wandering point of a Sobolev-(1,p) homeomorphism we can create closed trajectories by making arbitrarily small perturbations. As an application, in the planar case, we obtain the General Density Theorem, which states that generically the closed trajectories are dense in the non-wandering set.

Joint work with Assis Azevedo, Davide Azevedo and Mário Bessa.

References

[1] Assis Azevedo, Davide Azevedo, Mário Bessa and Maria Joana Torres, *The closing lemma and the planar general density theorem for Sobolev maps*, Proceedings of the American Mathematical Society, 149(4) (2021), 1687–1696.

[2] Assis Azevedo, Davide Azevedo, Mário Bessa and Maria Joana Torres, *Sobolev homeomorphisms are dense in volume preserving automorphisms*, Journal of Functional Analysis, 276(10) (2019), 3261–3274.