

# DYNAMICS OF THE FLOWS WITH CONSTANT SLOPE ON THE CYLINDER AND ON THE MÖBIUS STRIP

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## ABSTRACT

The study of the flows with constant slope on the 2-dimensional torus goes back to Denjoy and Siegel. More recently the study of these flows have been extended to the Klein bottle. Here we characterize the dynamics of the flows with constant slope on two non-compact surfaces, the cylinder and the Möbius strip. On the cylinder we consider smooth flows, and on the Möbius strip we consider both smooth and piecewise smooth flows.

## REFERENCES

- [1] Aranson, S.: Trajectories on nonorientable two-dimensional manifolds, *Math. USSR Sbornik* **9**, 297–313 (1969)
- [2] Barreira, L., Llibre, J., Valls, C.: The dynamics of a smooth flow with constant slope on the Klein bottle, preprint (2023)
- [3] Denjoy, A.: Sur les courbes définies par les équations différentielles à la surface du tore, *J. Math. Pures Appl.* **11**, 333–376 (1932)
- [4] Farkas, M.: *Periodic motions*. Springer-Verlag, New York (1994)

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