CLASSIFICATION OF SMOOTH STRUCTURES ON NON-HAUSDORFF ONE-DIMENSIONAL MANIFOLDS

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Previously [1] the authors gave a classification of C^r-differentiable structures, $r > 0$, on the non-Hausdorff line L with two origins. The aim of the present talk is to give a classification of differentiable structures the non-Hausdorff one-dimensional manifold Y called *non-Hausdorff letter Y*.

It turns out that in contrast with the real line those manifolds have infinitely many pair-wise non-diffeomorphic structures.

Moreover, the arguments of both proofs are similar and can be given only in terms of certain commutative diagrams. In particular, this allows to extends arguments to the following general problem. Given a pair of integers $0 < s < r \leq \infty$, it is possible to classify C^r structures of L (or Y) up to a C^s-diffeomorphism.

REFERENCES

[1] M. Lysynskyi, S. Maksymenko, Classification of differentiable structures on the non-Hausdorff line with two origins, (2024) arXiv:2406.09576