

- PEDRO H. ZAMBRANO, *Tameness in classes of generalized metric structures: quantale-spaces, fuzzy sets, and sheaves (joint work with Michael Lieberman and Jiří Rosický)*. Universidad Nacional de Colombia, Bogota.
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Tameness is a very important model-theoretic property of abstract classes of structures, under the assumption of which strong categoricity ([GrVa06, ShVa17]) and stability transfer theorems ([BaKuVa06, Za12]) tend to hold. We generalize the argument of Lieberman and Rosický [LiRo17]—based on Makkai and Paré’s result on the accessibility of powerful images of accessible functors ([BrRo17]) under the existence of a proper class of almost strongly compact cardinalities ([BaMa14])—that tameness holds in classes of metric structures, noting that the argument works just as well for structures with underlying \mathbb{Q} -spaces, \mathbb{Q} a reasonable quantale. Dropping the reflexivity assumption from the definition of metrics, we obtain a similar result for classes with underlying partial metric spaces: through straightforward translations from partial metrics to fuzzy sets and sheaves, we obtain, respectively, fuzzy and sheafy analogues of this result.

[BaKuVa06]J. Baldwin, D. Kueker and M. VanDieren, *Upward stability transfer for Tame Abstract Elementary Classes*, Notre Dame J. Formal Logic 47(2):291–298, 2006.

[BaMa14]J. Bagaria and M. Magidor, *Group radicals and strongly compact cardinals*, Trans. Amer. Math. Soc. 366:1857–1877, 2014.

[BrRo17]A. Brooke-Taylor and J. Rosický, *Accessible Images Revisited*, Proc. Amer. Math. Soc., 145(3):1317–1327, 2017.

[GrVa06]R. Grossberg and M. VanDieren. Categoricity from one successor cardinal in tame abstract elementary classes. *J. Math. Logic*, 6(2):181–201, 2006.

[LiRo17]M. Lieberman and J. Rosický, *Hanf numbers via accessible images*, Log. Methods Comput. Sci., 13(2:11):1–15, 2017.

[LiRoZa18]M. Lieberman, J. Rosický and P. Zambrano, *Tameness in generalized metric structures*, preprint. arXiv:1810.02317

[ShVa17]S. Vasey and S. Shelah, *Categoricity and multidimensional diagrams*, arXiv:1805.06291

[Za12]P. Zambrano, *A stability transfer theorem in d -tame Metric Abstract Elementary Classes*, Math. Logic Q. 58(4-5):333–341, 2012