TOPOLOGY SEMINAR

Simplicial analogues of homotopic distance

By

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Abstract: Homotopic distance as introduced by Macias-Virgos and Mosquera-Lois in [2] can be realised as a generalisation of topological complexity (TC) and Lusternik Schnirelmann category (cat). In this talk, we will introduce a simplicial analogue of homotopic distance (in the sense of Ortiz, Lara, Gonzalez and Borat as in [3]) and show that it has a relation with simplicial complexity (as defined in [1]). We will also take a glance at contiguity distance - another simplicial analogue of homotopic distance - as introduced in [2] and improved in [4]. References [1] J. Gonzalez, Simplicial Complexity: Piecewise Linear Motion Planning in Robotics, New York Journal of Mathematics 24 (2018), 279-292. [2] E. Macias-Virgos, D. Mosquera-Lois, Homotopic Distance between Maps, Mathematical Proceedings of the Cambridge Philosophical Society (2021), 1-21. [3] C. Ortiz, A. Lara, J. Gonzalez, A. Borat, A randomized greedy algorithm for piecewise linear motion planning, Mathematics, Vol 9, Issue 19 (2021). [4] A. Borat, M. Pamuk, T. Vergili, Contiguity Distance between Simplicial Maps, submitted, 2020. ArXiv: 2012.10627.

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