

Topological coarse shape groups

Zdravko Čuka
University of Split
zcuka@gradst.hr

Shape theory is the well known branch of topology and it has generalisation in the relatively young coarse shape theory. Important invariants of these theories are shape and coarse shape groups, respectively. Recently, topological shape group has been constructed. After examination of various topologizations of sets of coarse shape morphisms in general, the most appropriate one is used to topologize coarse shape groups. Previous construction leads us to topological group structure, moreover to the new invariant of coarse shape, which is naturally called Topological coarse shape group. The aforementioned topological shape group is closed subgroup of our new invariant. Concrete complete ultrametrics on topological coarse shape groups of compact metric spaces is given. Also, we prove many significant properties among which are independence of basepoint, invariance on taking quotients and theorem about continuity of topological coarse shape groups. These results can be used for constructing interesting examples and applications.