

A comparison of topologies on the fundamental group

Ziga Virk (IST Austria)

We will compare four topologies on the universal path space, which contains the fundamental group as a subspace. The four topologies are the Whisker topology, the Lasso topology, the topology induced by the compact open topology on paths/loops, and the topology τ recently introduced by Brazas. The four topologies agree on spaces which are path-connected, locally path-connected, and semi-locally simply-connected. In general, however, only two of these topologies turn the fundamental group into a topological group.