

Computable type of certain quotient spaces

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Topology plays an important role in determining the relationship between different levels of computability of sets in computable topological spaces. In particular, semicomputable sets with certain topological properties are necessarily fully computable. This is expressed in the notion of *computable type*: a space Σ is said to have computable type if every semicomputable set homeomorphic to Σ must be computable. Examples of sets with computable type include topological manifolds and Hausdorff continua.

In this talk, we consider the effect of quotients on preserving computable type, focusing primarily on locally Euclidean spaces. We provide some sufficient conditions under which space A having computable type implies the quotient space A/B has computable type and vice versa, as well as some interesting counterexamples.

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