Classification problems of some classes of continua

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Orbit equivalence relations (ERs) induced by continuous actions of Polish groups on Polish spaces provides an important ingredient in Invariant descriptive set theory (IDST). In this context, ERs on Polish spaces are compared by Borel reductions and classification of countable structures up to isomorphism present an important example of a complexity degree.

In this talk, we study some of the orbit ERs which are induced by natural actions of the homeomorphism groups. We present results about the complexity of conjugacy ERs of dynamical systems on the interval or on the Cantor set [K, BV]. If time permits, we sketch the proof that interval dynamical systems can be classified by countable structures. We also present some results about the complexity of homeomorphism ERs on some classes of (low-dimensional) continua [DV, KV, Z] (absolute retracts, rim-finite continua, dendrites, or rim-finite compacta) up to homeomorphism. Using the tools of IDST we show that there is no compact metrizable space such that every continuum is homeomorphic to exactly one component of this space. This can be used to answer a question by P. Minc.

References

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