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Cohomology of co-existentially closed continua

Although traditional model theory is not well-suited for handling topological structures, for a compact Hausdorff space X , Gelfand duality provides a way of studying X by instead studying the C^* -algebra $C(X)$ of continuous complex-valued functions on X . Real-valued logic for metric structures then provides a suitable setting for the model-theoretic treatment of these C^* -algebras. In this talk I will present some recent results in the model theory of compact connected Hausdorff spaces that have been obtained in this way; in particular, I will describe joint work with J. Lau concerning cohomological properties of X when $C(X)$ is an existentially closed model of the theory of continua.