

Modal compact Hausdorff spaces

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[Two linked talks with a common title and common abstract]

Joint work with Guram Bezhanishvili

We introduce modal compact Hausdorff spaces as generalizations of modal spaces, and show these are coalgebras for the Vietoris functor on compact Hausdorff spaces. We also introduce modal compact regular frames and modal de Vries algebras as algebraic counterparts of modal compact Hausdorff spaces, and give dualities for the categories involved. These extend the familiar Isbell and de Vries dualities for compact Hausdorff spaces, as well as the duality between modal spaces and modal algebras. As the first step in the logical treatment of modal compact Hausdorff spaces, we give a version of Sahlqvist correspondence for the positive modal language.