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C-algebras associated with topological relations*

With a closed relation on a locally compact Hausdorff space X arising from a continuous positive map of X to the space of Radon measures on X we associate a C^* -algebra, namely the Cuntz-Pimsner algebra of a particular Hilbert bimodule constructed from the relation. The relations may have branch points and there are no local homeomorphism requirements. This family of C^* -algebras contains the C^* -algebras of directed graphs, and the crossed product C^* -algebras of topological dynamical systems. Some examples are considered.