

THE EPIMORPHIC PROBLEM FOR $C(X)$

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We recall that epimorphisms need not be surjective in the category of commutative rings. Assume all spaces Tychonoff. Call a space X absolutely CR-epic if whenever X is a subspace of Y the induced ring homomorphism from $C(Y)$ to $C(X)$ is a ring epimorphism.

Our goal is characterize absolutely CR-epic spaces. There is an easy description of these spaces in the Lindelof case. There are complete results in the first countable case, and there are nuanced countable examples in the presence of the continuum hypothesis.

The work is joint. The most recent paper is with Barr and Kennison.