

THE CUNTZ SEMIGROUP, A RIESZ TYPE INTERPOLATION PROPERTY, COMPARISON AND THE IDEAL PROPERTY

CORNEL PASNICU AND FRANCESC PERERA

Abstract: We define a Riesz type interpolation property for the Cuntz semigroup of a C^* -algebra and prove it is satisfied by the Cuntz semigroup of every C^* -algebra with the ideal property. Related to this, we obtain two characterizations of the ideal property in terms of the Cuntz semigroup of the C^* -algebra. Some additional characterizations are proved in the special case of the stable, purely infinite C^* -algebras, and two of them are expressed in language of the Cuntz semigroup. We introduce a notion of comparison of positive elements for every unital C^* -algebra that has (normalized) quasitraces. We prove that large classes of C^* -algebras (including large classes of AH algebras) with the ideal property have this comparison property.

2010 Mathematics Subject Classification: Primary: 46L35; Secondary: 46L05.

Key words: C^* -algebra, the Cuntz semigroup, a Riesz type interpolation property, ideal property, comparison of positive elements, AH algebra.