

Title: Tensor product of proper contractions, stable and posinormal operators

## Author(s): Carlos S. Kubrusly

It is shown that if a class of Hilbert space operators is closed under constant direct sums and ordinary products, then it is closed under tensors products. This leads to a proof that proper contractiveness is preserved by tensor products. Weak, strong and uniform stabilities of tensor products of operators are also investigated, and it is proved that the tensor product of power bounded operators is of class  $C_{00}$  whenever one of the factors is a completely nonunitary contraction for which the intersection of the continuous spectrum with the unit circle has Lebesgue measure zero. Moreover, it is also shown that if a contraction has no nontrivial invariant subspace, then the tensor product with its adjoint is of class  $C_{00}$ . Furthermore, it is verified that posinormality is preserved by tensor products as well.

## Address:

Carlos S. Kubrusly Catholic University of Rio de Janeiro, 22453-900 Rio de Janeiro, RJ Brazil *E-mail:* carlos@ele.puc-rio.br