FROM MATRIX COMPLETIONS TO OPERATOR SYSTEM QUOTIENTS

VERN I. PAULSEN

A matrix is partially defined if only some of its entries are given definite values with the remaining entries regarded as complex or operator-valued variables. A choice of values for these indeterminate entries is called a completion of the matrix. In joint work with S.C. Power in the 1980's we characterized when a partially defined matrix could be completed to a positive semidefinite matrix. In this talk we present some further consequences of that work and show how it led to the concept of an operator system quotient. We present a new proof that the Cuntz algebras are nuclear that uses these ideas.