Abstracts of KOTAC
Volume 9(2007), 1–1

The Set of Contractions for an Indefinite Inner Product

Tsuyoshi Ando
Department of Mathematics, Hokkaido University, Kita, Sapporo, Hokka 060, Japan
ando@es.hokudai.ac.jp

An invertible Hermitian matrix H gives rise to an (indefinite) inner product. A matrix A is called an H-(strict) contraction (or to be H-contracive) if $H > A^*HA$. It is well-known that a matrix A is H-contractive for suitable H if and only if A has no eigenvalue on the unit circle. It seems difficult, however, to determine when a pair of matrices is H-contractive for common (hidden) H. In this talk we treat a milder problem of characterization for a set of matrices to coincide with the set of all H-contractions for suitable (hidden) H.