RUBÉN MARTÍNEZ AVENDAÑO, Universidad Autónoma del Estado de Hidalgo, Centro de Investigación en Matemáticas, Ciudad Universitaria, Pachuca, Hidalgo, México

Eigenmatrices and operators commuting with finite-rank operators

Using eigenmatrices, we characterize when a bounded operator in Hilbert space commutes with a finite-rank operator. We use this characterization to prove that if an operator commutes with a finite-rank operator, then it must commute with an operator of rank one. As a corollary of this, we show that (classical) Toeplitz operators do not commute with operators of finite rank.