The operator Fejér-Riesz theorem

J. Rovnyak

This will be an expository lecture, accessible to nonexperts, that surveys a selection of topics centering around Rosenblum's operator generalization of the classical Fejér-Riesz theorem on the factorization of nonnegative trigonometric polynomials. The topics include a proof via Schur complements, an update on spectral factorization, and a glimpse at multivariable problems and the noncommutative theory. The lecture is based on joint work with M. A. Dritschel.