

An abstract Fejer-Riesz theorem

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The classical Fejer-Riesz theorem states that a nonnegative complex trigonometric polynomial can be written as the square of an analytic trigonometric polynomial, and that this may be chosen to be outer. Marvin Rosenblum proved a version of this theorem for operator valued polynomials, and the speaker showed that factorization as a sum of squares of analytic polynomials held for strictly positive polynomials in the multivariate case (the question of outer factorizations a separate issue addressed together with Hugo Woerdeman). In this talk we consider Fejer-Riesz type factorizations over a (noncommutative) algebra with an archimedean quadratic module, replacing the commutative torus groups by an ordered group.