Abstract: The parabolic algebra Ap is the weakly closed algebra on the Hilbert space of square integrable functions on the real line generated by the unitary semigroup of right translations and the unitary semigroup of multiplication operators by the analytic exponential functions $e^{i\lambda x}$ ($\lambda \geq 0$). This operator algebra is reflexive, with lattice LatAp naturally homeomorphic to the unit disc (Katavolos and Power, 1997). In this talk, we explore further properties for Ap and we determine associated non-selfadjoint algebras derived from isometric representations and from compact perturbations. Moreover, we show that LatAp is non-synthetic relative to the maximal abelian multiplication subalgebra of Ap, extending the notion of a synthetic subspace lattice from commutative to noncommutative lattices.

This is joint work with Stephen Power.