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David Gaebler* (david-gaebler@uiowa.edu), 14 MacLean Hall, Iowa City, IA 52242. *Unital Dilations of Completely Positive Semigroups.*

Semigroups of completely positive maps on C^* -algebras arise in the dynamics of open quantum systems, and in the theory of noncommutative Markov processes. Several authors have studied how such a semigroup may be dilated to a semigroup of endomorphisms; however, the dilations achieved are generally non-unital, corresponding to the embedding of $B(H)$ as a corner of $B(K)$ for Hilbert spaces $H \subset K$. Jean-Luc Sauvageot's dilation theorem, published in 1986, achieves a unital dilation, but at the cost of important continuity properties. This talk will discuss Sauvageot's approach to dilation and its relationship to free probability and other subsequent developments. (Received September 08, 2012)