Co-universal C*-algebras for product systems, I
Elias Katsoulis

Co-universal C*-algebras for product systems, II
Evgenios Kakariadis

In these two talks we will present parts of our forthcoming paper with A. Dor-On, M. Laca with X. Li. The emphasis is on the interaction between selfadjoint and non-selfadjoint operator algebra theory with applications on current problems in C^*-algebra theory. Significant effort will be made in carefully reviewing preliminaries, including basic facts from the theory of C^*-envelopes and product systems.

Continuous product systems were introduced and studied by Arveson in the late 1980s. The study of their discrete analogues started with the work of Dinh in the 1990's and it was formalized by Fowler in 2002. Discrete product systems are semigroup versions of C^*-correspondences, that allow for a joint study of many fundamental C^*-algebras, including those which come from C^*-correspondences, higher rank graphs and elsewhere.

Katsura's covariant relations have been proven to give the correct Cuntz-type C^*-algebra for a C^*-correspondence X. One of the great advantages Katsuras Cuntz-Pimsner C^*-algebra is its co-universality for the class of gauge-compatible injective representations of X. In the late 2000s Carlsen-Larsen-Sims-Vittadello raised the question of existence of such a co-universal object in the context of product systems. In their work, Carlsen-Larsen-Sims-Vittadello provided an affirmative answer for quasi-lattices, with additional injectivity assumptions on X. The general case has remained open and will be addressed in these talks using tools from non-selfadjoint operator algebra theory.