Abstracts of KOTAC
Volume 12(2010), 26–26

Shifts of algebraic origin and their C^*-algebras

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In this talk I will describe certain two dimensional shifts of finite type X_D, first described by K. Schmidt, which are defined using algebraic data D. Under certain conditions on the algebraic data D, the shift X_D may be described as the infinite path space of a higher- rank graph Λ_D. We give conditions on the algebraic data D under which the C^*-algebra, $C^*(\Lambda_D)$ associated to the higher-rank graph Λ_D is purely infinite and simple, and compute its K-theory. The results described in this talk are part of joint work with Iain Raeburn, Natasha Weaver and Peter Lewin.