Title: A groupoid approach to KMS states on the Toeplitz algebras of finite higher rank graphs.

Abstract: KMS states on C^*-algebras associated to directed graphs and higher rank graphs have been the center of a lot of attention during the last decades. For a graph of rank k one can for every $r \in \mathbb{R}^k$ obtain a very natural dynamics by composing the map $\mathbb{R} \ni t \to (e^{itr_1}, \ldots, e^{itr_k}) \in \mathbb{T}^k$ with the gauge-action, and work by an Huef, Laca, Raeburn and Sims on strongly connected k-graphs has revealed that the simplex of KMS states in this setting can be quite rich and very interesting. The purpose of this talk is to use the groupoid model of these graph C^*-algebras to give a description of all the KMS states on the Toeplitz-algebras of all finite k-graphs. To do this I will first give a very brief description of a refinement of Neshveyevs Theorem, and then I will spend most of the talk explaining how to use this theorem to obtain a description of all the KMS states.

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