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KMS States and Groupoid C*-algebras

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I will illustrate the use of groupoids in the study of KMS states and weights on C*-algebras. The KMS condition, which was introduced in quantum statistical mechanics to characterize equilibrium states, plays a crucial role in the theory of von Neumann algebras. The study of KMS states and their phase transitions on specific C*-algebras, in particular graph algebras, is an active field of research where the groupoid techniques are well suited.