K-theory for crossed products by group actions on totally disconnected spaces and of semi-group algebras

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Abstract

In this lecture we give a report on joint work with Joachim Cuntz and Xin Li on the computation of the $K$-theory for crossed products by certain actions of groups on totally disconnected spaces. We apply the results to the computation of the K-theory for certain semi-group $C^*$-algebras. In particular, we obtain explicit computations for the $ax + b$-semigroups $R \rtimes R^*$, where $R$ is the ring of integers in a number field.