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*APS Boundary Conditions, KK-Theory and Cuntz–Krieger Systems*

We investigate an extension of ideas of Atiyah–Patodi–Singer (APS) to a noncommutative geometry setting. We use a mapping cone construction to turn odd index pairings into even index pairings with APS boundary conditions in the setting of  $KK$ -theory. We find that graph  $C^*$ -algebras provide a natural class of examples for our construction. Moreover, the index pairings coming from APS boundary conditions yield  $K$ -theoretic information about these graph  $C^*$ -algebras.