

DILATABILITY TO QUANTUM LINEAR CELLULAR AUTOMATA

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Abstract

It is our aim in this talk to describe some classes of linear cellular automata (LCAs) that can be studied in terms of an associated reversible LCA. We prove that any given LCA having as local transition map a row contraction can be dilated to a LCA having a local rule with isometric components. We also show that a LCA such that its global transition function is a partial isometry has a quantum LCA power dilation which is reversible.