

In Search of the Mathematics of Cellular Automata Rings using the Multiplexer Rule

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Cellular automata rings with local state change rules, often referred to as 1-dimensional cellular automata with periodic boundary, have been extensively studied and two thick volumes by Wolfram (1994, 2002) might suggest that the area has been exhausted. In this talk I will present a different class of cellular automata that use the multiplexer state change rule some of which have interesting behaviours. There is a distinct lack of mathematical formalism in this area and I will be asking the group for ideas on how we might improve that situation.