1026-68-56   **Klaus Sutner*** (`sutner@cs.cmu.edu`), 5000 Forbes Avenue, Pittsburgh, PA 15213.
Martin/Odlyzko/Wolfram - 20 Years Later. Preliminary report.

The seminal 1984 paper by Martin, Odlyzko and Wolfram was the starting point of the study of additive cellular automata from the point of view of algebraic dynamical systems. We will describe the algebraic machinery required to treat one- and two-dimensional additive cellular automata, focusing on the investigation of the minimal polynomials of the associated linear operators. Our main concern is the computational complexity of the analysis of the transition diagrams of the systems, both with respect to particular decision problems such as reversibility and a complete analysis of the diagram. (Received February 05, 2007)