

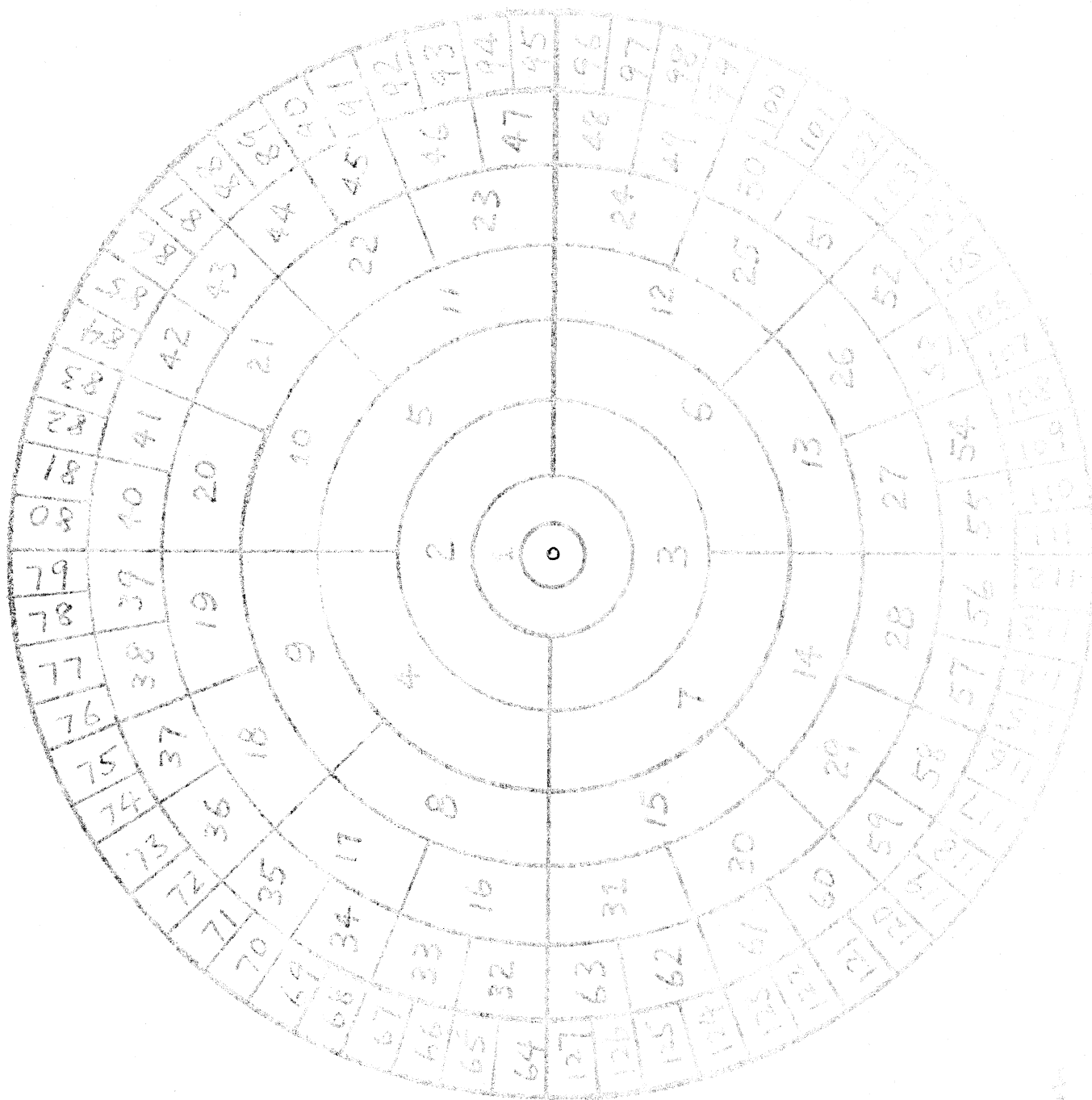
ABSTRACT

TITLE OF PAPER: Improved Diagrams for Feedback Shift-Registers

Authors: James L. Massey and Ruey-wen Liu
Dept. of Elec. Engr.
University of Notre Dame
Notre Dame, Ind.

The diagrams developed by Good have proved useful in analyzing the possible state-diagram structure of feedback shift-registers (FSR's.) A new diagram, called a circle diagram, is developed which also shows the possible state-transitions in an FSR. Unlike Good's diagram, the circle diagram has the desirable properties that (1) it is easily constructed, and (2) the diagram for m -stage FSR's is a sub-diagram of the diagram for m^0 -stage FSR's for any m^0 greater than m . State sequences of a particular FSR are described in terms of a "natural motion" of the operating point in the circle diagram.

Several classical concepts, including singularity and linearity, are interpreted in terms of the circle diagram. Some new results on cycle weights and stability are derived in an easy manner from the properties of the circle diagram.



Jumping
number →

Number of jumps