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PERIODIC AND EVENTUALLY PERIODIC SOLUTIONS OF PIECEWISE LINEAR AND MAX-TYPE DIFFERENCE EQUATIONS

MICHAEL RADIN

Rochester Institute of Technology School of Mathematical Sciences

Rochester, New York 14623, U.S.A.

E-mail: michael.radin@rit.edu

We examine the existence of periodic solutions and eventually periodic solutions of Piecewise Linear and Max-Type Difference Equations; in particular we will start with the 3X+1 Conjecture, the Tent Map, the Collatz Equations and Max-Type Equations. In addition, we will investigate the uniqueness of the periodic orbits and the patterns of the periodic orbits as well. Furthermore, investigate which particular periods can exist under what circumstances. Moreover, discuss the boundedness of solutions and applications in neuron model(s).

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