1113-39-40   **Michael A. Radin*** (`michael.radin@rit.edu`), Rochester Institute of Technology, School of Mathematical Sciences, College of Science, Rochester, NY 14623, and **Inese Bula** (`inese.bula@lu.lv`), University of Latvia, Institute of Mathematics & Computer Science, Zellu 8, Rufa, Latvia. *Periodic orbits of a neuron model with periodic internal decay rate.* Preliminary report.

In this paper we will study a non-autonomous piecewise linear difference equation which describes a discrete version of a single neuron model with a periodic internal decay rate. We will investigate the periodic behavior of solutions relative to the periodic internal decay rate. Furthermore,we will show that only even ordered periodic cycles can exist and show their stability character. (Received July 30, 2015)