On Rational Difference Equations with Periodic Coefficients

EMMANOUIL DRYMONIS[1], YEVGENIY KOSTROV[2], ZACHARY KUDLAK[3]

[1] *Department of Mathematics, University of Rhode Island, 02881–Rhode Island, USA.*

[2] *Department of Mathematics, Xavier University of Louisiana, 70125–Louisiana, USA.*

[3] *Division of Mathematics and Information Technology, Mount Saint Mary College, 12550–New York, USA.*
E-mail address: zachary.kudlak@msmc.edu

We investigate the global stability, periodic character, and the boundedness nature of the solutions of several special cases which are contained in the difference equation

$$x_{n+1} = \frac{\alpha_n + \beta_n x_n x_{n-1} + \gamma_n x_{n-1}}{A_n + B_n x_n x_{n-1} + C_n x_{n-1}}, n = 0, 1, \ldots$$

where the parameters $\alpha_n, \beta_n, \gamma_n, A_n, B_n, C_n$ are nonnegative periodic sequences, and the initial conditions x_{-1}, x_0 are nonnegative real numbers, such that the denominators are always positive.

References

[1] A.M. Amleh, E. Camouzis, and G. Ladas, *On The Dynamics of Rational Difference Equations, Part 1*, International Journal of Difference Equations, Volume 3 Number 1 (2008), 1–35.

[2] A.M. Amleh, E. Camouzis, and G. Ladas, *On the Dynamics of Rational Difference Equations, Part 2*, International Journal of Difference Equations, Volume 3 Number 2 (2008), 195–225.