

M. Jaber, M. Dehghan and J. Mashregi, **Dynamics of the difference equation**
 $x_{n+1} = \frac{x_n + px_{n-k}}{x_n + q}$, *Computers and Mathematics with Applications*, 56 (2008), 186–198.

Abstract

We study the invariant interval, the character of semicycles, the global stability, and the boundedness of the difference equation

$$x_{n+1} = \frac{x_n + px_{n-k}}{x_n + q}, \quad n \geq 0,$$

where the initial conditions $x_{-k}, \dots, x_{-1}, x_0$ are nonnegative, and $p, q > 0$.