An Alternative Approach to Differential-Difference Equations Using the Variational Iteration Method

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Although a variational iteration algorithm was proposed by Yildirim (Math. Prob. Eng. 2008 (2008), Article ID 869614) that successfully solves differential-difference equations, the method involves some repeated and unnecessary iterations in each step. An alternative iteration algorithm (variational iteration algorithm-II) is constructed in this paper that overcomes this shortcoming and promises to provide a universal mathematical tool for many differential-difference equations.