The Superposed Hyperincursive System of the Discrete Harmonic Oscillator

Adel F. Antippa and Daniel M. Dubois
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Abstract
In the preceding paper we showed how the dual incursive system of the discrete harmonic oscillator exhibits orbital stability, and possesses constants related to energy expressions. This paper introduces the concept of structural system bifurcation and we study the superposed hyperincursive system of the discrete harmonic oscillator. The computing algorithm of this superposed hyperincursive system, is a superposition of the two computing algorithms of the dual incursive system of the discrete harmonic oscillator. We study it conceptually, analytically, numerically and graphically. We analyze its difference equations of motion, closed form solutions, energy conservation, orbital stability, and coherence conditions. The new concept of the phase of discretized time for parallel computing algorithms is introduced. We find that the system exhibits orbital stability and admits infinitely many energy conserving solutions. It can be fine tuned in order to conserve the classical expression for the energy. This, to the best of our knowledge, has never been achieved before. This work is one more step in the process of unifying the clockwork universe, the quantum universe and the computing universe, by the discretization of spacetime.