

# **Incurive Discretization, System Bifurcation, and Energy Conservation**

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Journal of Mathematical Physics

Vol. 48, no. 1 (2007)

## **Abstract**

Incurive discretization of the classical harmonic oscillator leads to system bifurcation. The resulting hyperincurive representation has two alternative distinct algorithms of ordered, serial, non-commuting instructions, and admits solutions having a discretized classical total energy that is perfectly conserved, and phase space trajectories that are fully stable at all time scales. Hyperincurive representations can be generated for any Hamiltonian system.