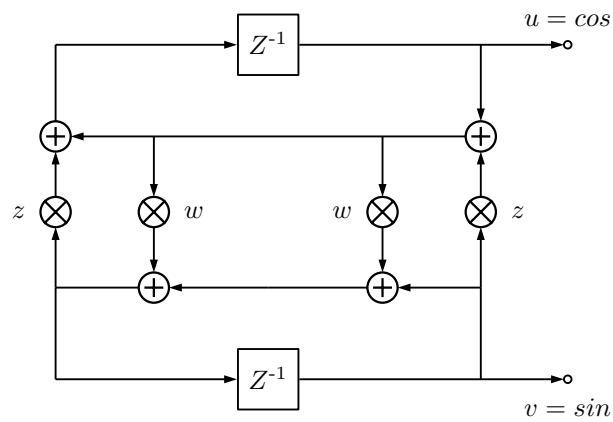


The Symplectic Oscillator

A. D. Levine

dl@acm.org

The perpetual quadrature oscillator discovered by this author, derived from Verlet integration of phasor rotation, original to and foundationally applied in the Muzemazer Chromavoder™, a musical instrument commercially released in September 2009:



$$\alpha = f/f_s$$

$$w = +\sin(\pi\alpha) \cos(\pi\alpha)^{+1}$$

$$z = -\sin(\pi\alpha) \cos(\pi\alpha)^{-1}$$

$$\Delta T = 1/f_s \implies [u += zv, v += 2wu, u += zv]$$