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Extended Cellular Automata Models of Particles and Space-Time
MICHAEL BEEDLE, University of Chicago (Compton Lectures) — Models of particles and space-time are explored through simulations and theoretical models that use Extended Cellular Automata models. The expanded Cellular Automata Models consist go beyond simple scalar binary cell-fields, into discrete multi-level group representations like S0(2), SU(2), SU(3), SPIN(3,1). The propagation and evolution of these expanded cellular automatas are then compared to quantum field theories based on the "harmonic paradigm" i.e. built by an infinite number of harmonic oscillators, and with gravitational models.

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