

Abstract Submitted
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Causality, Symmetry, Brain, Evolution, DNA and a new Theory of Physics SERGIO PISSANETZKY, Dep. of Physics. Texas A&M University, Retired — THEORY. Except for black holes, our world is causal. In Physics, causal sets formalize causality. The easiest way to explain the importance of causets is: all finite algorithms and computer programs are causets. Let S be a causet model of a dynamical system. S has a symmetry of the action: set P of legal permutations of S . Hence all causets have conservation laws. Permutations in P represent trajectories in state space. But P is non-conservative. New Physics: an action functional F was observed. When F is minimized over P , conservative subset P^* is obtained. In P^* , conserved quantities emerge as group-theoretical block systems over S . Block systems are also causets, and iteration leads to a network of blocks. This is a new theory of Physics. PREDICTIONS. (1) Brain's dendritic trees must be optimally short. Cuntz (June 2012) observed a $2/3$ optimally short power law. (2) Causal hierarchies. Fuster(2005) observes identical hierarchies in cortex. DNA (Sept 2012) is described as hierarchical networks. (3) Action functional. Lerner (Aug 2012) proposed an action functional and minimum entropy on trajectories of dynamical processes. Friston (2003) proposed an energy functional. (4) Simple computer-brain experiments (Pissanetzky 2011a). REFERENCES: www.SciControls.com.

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