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Computer Simulation of Dynamical Systems: The good, the bad, and the awful¹

LEO KADANOFF, University of Chicago

Excellent computer simulations are done for a purpose. The most valid purposes for scientific simulations are to resolve a well-posed scientific or technical question or to suggest a new scenario for complex processes. These goals are best achieved by a full integration of the modeling effort into a scientific program which also includes theory and experiment/observation. Some excellent work is reviewed. Some less happy stories are recounted.

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