

## Beyond differential equations

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### Abstract

My view: Old and new mathematics. The old paradigm: Simple equations have simple solutions. To obtain complicated behavior, you need complicated models. The new paradigm: Linear models (even complicated ones) have simple solutions. Nonlinear models (even simple ones) may have tremendously complicated solutions!

Mathematics as a language of science and technology. The old mathematics: language of non-living nature. Top-down approach. Complicated, comprehensible and fragile. The new mathematics: perhaps the language of living nature. Bottom-up approach. Simple local behavior, complex emergent phenomena. Imperfect understanding. Antifragile. Learning.