LORENZ CHAOS: NOW EVEN WILDER

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The Lorenz system, which has a phase space of dimension three, is well know as a prototypical example of a continuous-time system with a chaotic attractor. Are there even more complicated types of chaotic dynamics in higher dimensions? The answer is yes, as was shown recently by the construction of a five-dimensional Lorenz-type system; one also speaks of wild chaos. I will briefly review classical Lorenz chaos and then present how wild chaos arises in the higher-dimensional context. The latter is associated with several types of bifurcations of a noninvertible map of the punctured plane, which contains the complex quadratic family as a special case.

This is joint work with Hinke Osinga and Stephanie Hittmeyer.