How chaotic is differentiation?

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What does one get if one differentiates repeatedly a given function? The theory of linear dynamics studies precisely this kind of question: Which orbits does one get, say, under the action of a continuous linear operator on a Banach space? Typically we are interested in periodic orbits, dense orbits, or the related notion of linear chaos.

In this talk, we will use the differentiation operator D on the space H(C) of entire functions as a guiding principle to present concepts and results in linear dynamics. We report, in particular, on recent work that uses probabilistic techniques.