Chaos and frequent hypercyclicity for weighted shifts

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Chaos and frequent hypercyclicity are two of the most important notions in linear dynamics. While their definition suggests that they are closely related, work by Bayart, Grivaux and Menet has shown that they are in fact independent. In particular, there are frequently hypercyclic non-chaotic weighted shifts on c_0. On the other hand, Bayart and Ruzsa have recently shown that on ℓ^p, $1 \leq p < \infty$, both notions coincide for weighted shift. So what do the spaces ℓ^p have that c_0 does not? And how about weighted shifts on Fréchet spaces? Does the space $H(\mathbb{C})$ of entire functions behave like the ℓ^p or rather like c_0? Or how about $H(\mathbb{D})$, the space of holomorphic functions on the unit disk? We will answer these questions in the talk that is based on joint work with Stéphane Charpentier and Quentin Menet.