Linear dynamics of shifts on trees

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As Héctor Salas famously said, weighted shifts are a "favourite testing ground for operator-theorists". This is even more true for linear dynamics, which would hardly exist without weighted shifts. Now, classical weighted shifts live on either $\mathbb{N}$ or $\mathbb{Z}$. In 2012, Jabłoński, Jung and Stochel [2] developed, quite naturally, a theory of weighted shifts on directed trees. The study of the dynamics of such shifts was initiated by Martínez-Avendaño [3]. In this talk we will report on joint work with Dimitris Papathanasiou [1], in which we completely characterize hypercyclic weighted shifts on the spaces ℓ^p and c_0 over arbitrary directed trees. The corresponding work on chaos is in progress.

References

[1] K.-G. Grosse-Erdmann and D. Papathanasiou, Dynamics of weighted shifts on directed trees, *Indiana Univ. Math. J.*, to appear.

[2] Z. J. Jabłoński, I. B. Jung and J. Stochel, Weighted shifts on directed trees, *Mem. Amer. Math. Soc.* **216** (2012), no. 1017.

[3] R. A. Martínez-Avendaño, Hypercyclicity of shifts on weighted L^p spaces of directed trees, *J. Math. Anal. Appl.* **446** (2017), 823–842.