Distributional chaos in the solutions of certain differential equations

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The notion of distributional chaos has been rencently added to the study of the linear dynamics of operators and C_0-semigroups of operators. A criterion for distributional chaos and the existence of a dense distributionally irregular manifold for a C_0-semigroup has been recently obtained in [1]. We apply it to several examples of C_0-semigroups that were already known to be chaotic in the sense of Devaney. In particular we will study distributional chaos for birth-and-death processes with proliferations.
Joint work with J. Alberto Conejero.

[1] Angela A. Albanese, Xavier Barrachina, Elisabetta M. Mangino, and Alfredo Peris. *Distributional chaos for strongly continuous semigroups of operators*. Commun. Pure Appl. Anal., 12(5):2069–2082, 2013.

[2] Xavier Barrachina and José A. Conejero. *Devaney chaos and distributional chaos in the solution of certain partial differential equations*. Abstr. Appl. Anal., 2012:Art. ID 457019, 11, 2012.