Daniel Marinho Pellegrino, Universidade Federal da Paraíba, Brazil. email: MISSING

LINEAR SUBSETS OF NONLINEAR SETS IN TOPOLOGICAL VECTOR SPACES

For the last decade there has been a generalized trend in Mathematics on the search for algebraic structures (linear spaces, closed subspaces, or infinitely generated algebras) composed of mathematical objects enjoying certain properties. This trend has caught the eye of many researchers and has also had a remarkable influence in Real and Complex Analysis, Operator Theory, Summability Theory, Polynomials in Banach spaces, Hypercyclicity and Chaos, and general Functional Analysis. We try to provide an account on the advances and on the state of the art of this trend, nowadays known as lineability and spaceability. This is a joint work with Luis Bernal and Juan Seoane.

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