LINEABILITY AND SPACEABILITY IN FUNCTION SPACES

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ABSTRACT. Given a subset M of a topological vector space X, we say that M is μ-*lineable* (for some cardinal μ, finite or infinite) if there exists an infinite dimensional vector space, V, of dimension μ, and with $V \subset M \cup \{0\}$. When the structures that appear are more complex there are some other definitions to appear, such as *algebrability* or *spaceability* (when the V above can be chosen to be an infinitely generated algebra or an infinite dimensional closed subspace, respectively). In this work we shall present many classical examples in this recently coined topic and we shall also introduce some new advances and results ([2]) that have appeared in this theory since its first appearance at the beginning of the XXI century (see [1]).

REFERENCES

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[2] P. Jiménez-Rodríguez, G. A. Muñoz-Fernández, and J. B. Seoane-Sepúlveda, *Non-Lipschitz functions with bounded gradient and related problems*, Linear Algebra Appl. **437** (2012), no. 4, 1174–1181.