

Gowers, W. T.

A solution to Banach's hyperplane problem. (English) Zbl 0838.46011
Bull. Lond. Math. Soc. 26, No. 6, 523-530 (1994).

Summary: An infinite-dimensional Banach space X is constructed which is not isomorphic to $X \oplus \mathbb{R}$. Equivalently, X is not isomorphic to any of its closed subspaces of codimension one. This gives a negative answer to a question of Banach. In fact, X has the stronger property that it is not isomorphic to any proper subspace. It also happens to have an unconditional basis.

MSC:

[46B20](#) Geometry and structure of normed linear spaces

[46B15](#) Summability and bases; functional analytic aspects of frames in Banach and Hilbert spaces

Cited in **4** Reviews
Cited in **39** Documents

Keywords:

[unconditional basis](#)

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