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8. Analysis

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The Lyapunov property of certain Banach spaces

The well-known Lyapunov theorem states that the range of a countably-additive atomless measure with values in a finite-dimensional space is convex. Since this theorem does not hold in any infinite-dimensional Banach space, generalizations to such spaces usually consider the closure of the measure's range. A Banach space is said to have the *Lyapunov property*, if the closure of the range of any countably-additive atomless measure with values in this space is convex. The results on the Lyapunov property of several Banach spaces will be presented. Spaces $c_0(\Gamma, X)$, $C(K)$ where K is a countable compact are shown to have the Lyapunov property, as well as spaces of Tsirelson, Schlumprecht, Gowers-Maurey, Gowers.

References: V. M. Kadets, G. Schechtman. The Lyapunov Theorem for l_p-valued Measures. St. Petersburg Math. J. , Vol. 4 (1993), No. 5, p. 961–966. L. M. Tseytlin, O. I. Vladimirskaya. On the Lyapunov property of certain Banach spaces. Proc. of Institute of Mathematics of Ukrainian Nationa l Academy of Sciences, issue 2(18), 1998.