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Total convexity for powers of the norm in uniformly convex Banach spaces. (English)

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J. Convex Anal. 7, No. 2, 319-334 (2000).

Summary: The aim of the paper is to show that, in uniformly convex Banach spaces, the powers of the norm with exponent $r > 1$ share a property called total convexity. Using this fact we establish a formula for determining Bergman projections on closed hyperplanes and half spaces. This leads to a method for solving linear operator equations (e.g., first order Fredholm and Volterra equations) in spaces which are uniformly convex and smooth.

MSC:

46B20 Geometry and structure of normed linear spaces

47A50 Equations and inequalities involving linear operators, with vector unknowns

Cited in **15** Documents

Keywords:

uniformly convex Banach spaces; total convexity; Bregman projections; linear operator equations; first order Fredholm and Volterra equations

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