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Abstracts of Short Communications and Posters

Section:

8. Analysis

1991 MS Classification: 46
Fry, Robb, University of Northern British Columbia, Canada
Smooth Bump Functions on Banach Spaces
A C^k*-smooth bump function* on a Banach space, is a C^k-smooth, realvalued function with bounded, non-empty support. We show that a weakly countably determined Banach space (which includes separable and reflexive spaces) admits a C^k-smooth bumb function whenever each of its separable subspaces does. This allows us to prove that a Banach space X admits a norm with modulus of smoothness of power type 2 iff X has the Radon Nikodym property and admits a contnuous, twice Gâteaux differentiable bumb function, and in addition, that for K a scattered, Eberlein compact, $C(K)$ admits a C^∞-smooth bumb function.