

Remarks on the set of norm-attaining functionals and differentiability

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We use the smooth variational principle and a standard renorming technique to give a short direct proof to the classical Bishop–Phelps–Bollobás theorem on the density of norm-attaining functionals for weakly compactly generated Banach spaces. Then we show that a slight adjustment of a known Preiss–Zajíček differentiability argument provides for a simple, useful characterization of individual norms on separable Banach spaces admitting residual sets of norm-attaining functionals in terms of Fréchet differentiability of their dual norms.

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