

A remark on smooth images of Banach spaces

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Let  $X$  be a non-separable super-reflexive Banach space with density a regular cardinal. Then for any separable Banach space  $Y$  of dimension at least two there exists a  $C^\infty$ -smooth surjective mapping  $f : X \rightarrow Y$  such that the restriction of  $f$  onto any separable subspace of  $X$  fails to be surjective. This solves a problem posed by Aron, Jaramillo, and Ransford.

This is a joint work with Petr Hájek.