

Principle of local reflexivity, respecting subspaces,  
and approximation properties of pairs

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We prove a strengthening of the principle of local reflexivity in a general form. The added strength makes local reflexivity operators respect given subspaces. The proof relies on Grothendieck's description of the dual of the space of finite-rank operators in terms of integral operators.

Applications are given to bounded approximation properties of pairs, consisting of a Banach space and its subspace. This concept involves finite-rank operators fixing a subspace in a given Banach space. It was introduced and studied by Figiel, Johnson, and Pełczyński in *Israel J. Math.* 183 (2011), 199–231.