



Mathematics > Functional Analysis

Calderon couples of p-convexified Banach lattices

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This paper updates the previous version in the following ways: 1. The main result is extended from the case of sequence spaces to the case of Dedekind complete Banach lattices. 2. A new appendix is added to mention some sufficient and necessary conditions (which are probably already known) for lattices to be Dedekind complete.

We deal with the question of whether or not the p-convexified couple $(X_0^{(p)}, X_1^{(p)})$ is a Calderon couple under the assumption that (X_0, X_1) is a Calderon couple of Banach lattices on some measure space. We find that the answer is affirmative, not only in the case of sequence spaces treated in the previous version, but also in the case where X_0 and X_1 are Dedekind complete Banach lattices (and provided the same additional "positivity" assumption is imposed regarding (X_0, X_1)). We also prove a quantitative version of the result with appropriate norm estimates.

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