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Oertel, F.

Compositions of operator ideals and their regular hulls. (English summary)

23rd Winter School on Abstract Analysis (Lhota nad Rohanovem, 1995; Poděbrady, 1995).
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The regular hull $\mathcal{A}^{\mathrm{reg}}$ of a quasi-Banach operator ideal $\mathcal{A}$ in the sense of Pietsch consists of all operators $T\colon X \to Y$ (between Banach spaces) which, considered as operators with values in the bidual Y'' of Y, belong to $\mathcal{A}$. The author studies the regular hull of the composition $\mathcal{A} \circ \mathcal{B}$ of two ideals $\mathcal{A}$ and $\mathcal{B}$—such objects appear naturally in the context of trace duality. As an application he proves that $\mathcal{N}^{\mathrm{reg}} = \mathcal{I} \circ \mathcal{W}$ which follows by standard arguments from Grothendieck's important formula $\mathcal{N} = \mathcal{W} \circ \mathcal{I}$ (here $\mathcal{N}, \mathcal{W}, \mathcal{I}$ stands for the ideal of nuclear, weakly compact and integral operators, respectively).

{For the entire collection see MR1392994 (96m:00021)}

Reviewed by *Andreas Defant*