

Mihailov, Dobrinca

On the procedures "min" and "max" for operator ideals on Banach couples. (English)

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One extends the procedures from *A. Pietsch*, Operator ideals (1978; Zbl 0399.47039) of generating new ideals to the case of operator ideals on Banach couples.

The product of two operator ideals on Banach couples and the minimal kernel \mathcal{A}^{\min} is defined. One shows the properties that result from the application of "min" procedure to the particular ideals.

The quotient $\mathcal{A}^{-1} \circ \mathcal{B}$ is also defined and the "max" procedure introduced. For closed operator ideals one shows that $(\mathcal{A}_1 \wedge \mathcal{A}_2)^{\max} = \mathcal{A}_1^{\max} \wedge \mathcal{A}_2^{\max}$.

The following relations between two procedures are established:

$$(\mathcal{A}^{\min})^{\max} = \mathcal{A}^{\max} \quad \text{and} \quad (\mathcal{A}^{\max})^{\min} = \mathcal{A}^{\min}.$$

MSC:

47L10 Algebras of operators on Banach spaces and other topological linear spaces

Keywords:

generating new ideals; operator ideals on Banach couples; product; minimal kernel; "min" procedure; "max" procedure