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Almost demi Dunford–Pettis operators on Banach lattices

Comment.Math.Univ.Carolin. 64,4 (2023) 429–438.

Abstract: We introduce new concept of almost demi Dunford–Pettis operators. Let E be a Banach lattice. An operator T from E into E is said to be almost demi Dunford–Pettis if, for every sequence $\{x_n\}$ in E_+ such that $x_n \to 0$ in $\sigma(E, E')$ and $\|x_n - Tx_n\| \to 0$ as $n \to \infty$, we have $\|x_n\| \to 0$ as $n \to \infty$. In addition, we study some properties of this class of operators and its relationships with others known operators.

Keywords: almost demi Dunford–Pettis operator; Banach lattice; positive Schur property
AMS Subject Classification: 46A40, 46B40, 46B42

References

[1] Abramovich Y. A., Aliprantis C. D., *An Invitation to Operator Theory*, Graduate Studies in Mathematics, 50, American Mathematical Society, Providence, 2002.
[2] Aliprantis C. D., Burkinshaw O., *Positive Operators*, Pure and Applied Mathematics, 119, Academic Press, Orlando, 1985.
[3] Aqzzouz B., Elbour A., *Some characterizations of almost Dunford–Pettis operators and applications*, Positivity **15** (2011), no. 3, 369–380.
[4] Aqzzouz B., Elbour A., Wickstead A. W., *Positive almost Dunford–Pettis operators and their duality*, Positivity **15** (2011), no. 2, 185–197.
[5] Benkhaled H., Elleuch A., Jeribi A., *The class of order weakly demicompact operators*, Rev. R. Acad. Cienc. Exactas Fís. Nat. Ser. A Mat. RACSAM **114** (2) (2020), no. 2, Paper No. 76, 8 pages.
[6] Benkhaled H., Hajji M., Jeribi A., *L-weakly and M-weakly demicompact operators on Banach lattices*, Filomat **36** (2022), no. 13, 4319–4329.
[7] Benkhaled H., Hajji M., Jeribi A., *On the class of demi Dunford–Pettis operators*, Rend. Circ. Mat. Palermo Ser. (2) **72** (2022), no. 2, 901–911.
[8] Benkhaled H., Jeribi A., *On B-weakly demicompact operators on Banach lattices*, Vladikavkaz. Mat. Zh. **25** (2023), no. 4, 20–28.
[9] Guerre-Delabrière S., *Classical Sequences in Banach Spaces*, Monographs and Textbooks in Pure and Applied Mathematics, 166, Marcel Dekker, New York, 1992.
[10] Meyer-Nieberg P., *Banach Lattices*, Universitext, Springer, Berlin, 1991.
[11] Petryshyn W. V., *Construction of fixed points of demicompact mappings in Hilbert space*, J. Math. Anal. Appl. **14** (1966), 276–284.
[12] Wnuk W., *Banach lattice with weak Dunford–Pettis property*, Atti Sem. Mat. Fis. Univ. Modena **42** (1994), no. 1, 227–236.