Bartsch, René; **Poppe, Harry**

An abstract algebraic-topological approach to the notions of a first and second dual space. III. (English) Zbl 1361.46004

N. Z. J. Math. 46, 1-8 (2016).

Summary: Here we continue to develop a concept, that generalizes the idea of the second dual space of a normed vector space in a fairly general way. As in the prequel, the main tool is to recognize the "first dual" as a means to the end of the second dual. Especially, we will easily prove here some essential statements on embeddings of noncommutative C^*-algebras in their second dual, whose analogues are known in the commutative setting.

For Part I see [Theory and applications of proximity, nearness and uniformity. Caserta: Dipartimento di Matematica, Seconda Università di Napoli; Rome: Aracne. 275–297 (2009; Zbl 1235.46007)], for Part II see [Int. J. Pure Appl. Math. 84, No. 5, 651–667 (2013)].

MSC:

46A20 Duality theory for topological vector spaces
46B10 Duality and reflexivity in normed linear and Banach spaces
46H15 Representations of topological algebras
46L05 General theory of C^*-algebras
46L10 General theory of von Neumann algebras

Keywords:

second dual; noncommutative C^*-algebra; Gelfand theorem

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