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A few remarks on bounded homomorphisms acting on topological lattice groups and topological rings. (English) [Zbl 1499.54144](#)
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Summary: Suppose G is a locally solid lattice group. It is known that there are non-equivalent classes of bounded homomorphisms on G which have topological structures. In this paper, our attempt is to assign lattice structures on them. More precisely, we use a version of the remarkable Riesz-Kantorovich formulae and Fatou property for bounded order bounded homomorphisms to allocate the desired structures. Moreover, we show that unbounded convergence on a locally solid lattice group is topological and we investigate some applications of it. Also, some necessary and sufficient conditions for completeness of different types of bounded group homomorphisms between topological rings have been obtained, as well.

MSC:

- [54H12](#) Topological lattices, etc. (topological aspects)
- [13J99](#) Topological rings and modules
- [20K30](#) Automorphisms, homomorphisms, endomorphisms, etc. for abelian groups
- [47B65](#) Positive linear operators and order-bounded operators

Keywords:

locally solid ℓ -group; bounded homomorphism; unbounded topology; Fatou property; topological ring; completeness

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