

A FUNCTIONAL CALCULUS FOR QUOTIENT BOUNDED OPERATORS

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Abstract. If (X, \mathcal{P}) is a sequentially locally convex space, then a quotient bounded operator $T \in Q_{\mathcal{P}}(X)$ is regular (in the sense of Waelbroeck) if and only if it is a bounded element (in the sense of Allan) of algebra $Q_{\mathcal{P}}(X)$. The classic functional calculus for bounded operators on Banach space is generalized for bounded elements of algebra $Q_{\mathcal{P}}(X)$.

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References

- [1] G.R. Allan, *A spectral theory for locally convex algebras*, Proc. London Math. Soc. **15** (1965), 399-421. [MR0176344](#)(31 #619). [Zbl 0138.38202](#).
- [2] A. Chilana, *Invariant subspaces for linear operators on locally convex spaces*, J. London. Math. Soc., **2** (1970) , 493-503. [MR0423095](#)(54 #11078).
- [3] I.Colojoara, *Elemente de teorie spectrală*, Editura Academiei Republicii Socialiste România, Bucureşti 1968. [MR0242000](#)(39 #3335).
- [4] J.R. Gilles, G.A. Joseph, D.O. Koehler and B. Sims, *On numerical ranges of operators on locally convex spaces*, J. Austral. Math. Soc. **20** (Series A), (1975), 468-482. [MR0385598](#)(52 #6459). [Zbl 0312.47002](#).
- [5] G.A. Joseph, *Boundness and completeness in locally convex spaces and algebras*, J. Austral. Math. Soc., **24** (Series A), (1977), 50-63. [MR0512300](#)(58 #23602).
- [6] E. Kramar, *On the numerical range of operators on locally and H -locally convex spaces*, Comment. Math. Univ. Carolinae **34**, 2 (1993), 229-237. [MR1241732](#)(94h:47004). [Zbl 0806.47003](#).

2000 Mathematics Subject Classification: 47A60, 46A03

Keywords: locally convex space, functional calculus.

This work was supported by the CEEEX grant ET65/2005, contract no 2987/11.10.2005, from the Romanian Ministry of Education and Research.

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- [7] E. Kramar, *Invariant subspaces for some operators on locally convex spaces*, Comment. Math. Univ. Carolinae **38**,3 (1997), 635-644. [MR1601676](#)(99a:47013). [Zbl 0937.47005](#).
- [8] S.M. Stoian, *Spectral radius of quotient bounded operator*, Studia Univ. Babes-Bolyai, Mathematica, No.**4** (2004), 15-126. [MR2176290](#)(2006e:47010). [Zbl pre05063677](#).
- [9] V.G. Troitsky, *Spectral Radii Of Bounded Operators On Topological Vector Spaces*, PanAmerican Mathematical Society, **11**, no.3 (2001), 1-35. [MR1856716](#)(2002h:47007). [Zbl 1006.47001](#).

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