

On algebras which are inductive limit of Banach spaces

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In this talk I will introduce algebras which are inductive limits of Banach spaces and carry inequalities which are counterparts of the inequality for the norm in a Banach algebra. The case where the inductive limit consists of one Banach space gives a Banach algebra, while the case where the inductive limit is of infinite number of Banach spaces gives some other “well behaved” topological algebras. I will then show that the well-known Wiener theorem can be generalized to the setting of these algebras, and also consider factorization theory. Finally, I will focus on the case where the multiplication is a convolution of measurable functions on a locally compact group. This talk is based on a joint work with Daniel Alpay.

More details can be found in:

- [1] D. Alpay and G. Salomon. On algebras which are inductive limit of Banach algebras. *preprint on arXiv*, 2013.
- [2] D. Alpay and G. Salomon. Topological convolution algebras. *Journal of Functional Analysis*, 2013.
- [3] D. Alpay and G. Salomon. Non-commutative stochastic distributions and applications to linear systems theory. *Stochastic Processes and their Applications*, 2013.