



Wednesday, April 24, 2013

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## Rearrangement of series. The theorem of Levy-Steiniz

**Abstract:** The theorem of Levy-Steinitz is an extension of the classical theorem of rearrangement of series of real numbers due to Riemann. It asserts that the set of possible sums of all the rearrangements of a series of vectors in a real vector space of finite dimension is either the empty set or the translate of a vector subspace. Stated in this way it does not hold for real Banach spaces of infinite dimension. In fact the set of sums may reduce to exactly two different points. This result was extended by J.O. Wojtaszczyk in 2005.

In 1990 and 1993 Banaszczyk proved an extension of the original Levy-Steinitz theorem for nuclear complete metrizable locally convex spaces. He also showed that if the set of sums has certain form for each series, then the space is necessarily nuclear. This type of questions were analyzed in a more general context by Bonet and Defant in 2000.

In this lecture we will present the ideas of the proof of the original Levy-Steinitz theorem and will discuss related results for spaces of infinite dimension.



Univ. Carlos III de Madrid



Default Data

**Time** 10:45 to 11:45  
**Location** Room 2.2.D08  
Building Sabatini (2nd Floor)

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