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14. Some comments. The basic result in the problem of representability for numerical exponentially bounded functions is due to D. V. WIDDER and is quoted above as Proposition 11.

The extension of Widder's result to vector-valued functions in reflexive Banach spaces, our Theorem 12, is due to I. MIYADERA [4].

Moreover, Miyadera presented an example showing that the conditions (A_1) , (A_2) of Theorem 12 cannot be sufficient for the validity of the mentioned theorem in nonreflexive Banach spaces.

Consequently, an additional condition to (A_1) , (A_2) of Theorem 12 is necessary. Our condition (A_3) in Theorem (10) (or (A'_3) in Remark 11) seems the most simple and natural one and solves completely the problem in consideration. Miyadera's theorem is then a simple consequence of Theorem 10.

Another possibility to extend Miyadera's result to nonreflexive spaces is given in Theorem 13 which deals with the representability problem by exponentially weakly compactly bounded functions and is also an easy consequence of Theorem 10.

Recently, the representability problem was attacked by D. LEVIATAN [5] (see Theorem 7 in [5]) from rather different point of view. Leviatan proved, among others, that, under conditions (A_1) , (A_2) of Theorem 12, the original function f can be found in dual spaces of appropriate subspaces of E^* .

Finally, let us remark that the proof of Proposition 7, given by means of Weierstrass-Stone theorem, may seem a little inadequate because it is too "analytic" and the problem itself is essentially linear. The result follows also easily from Šmuljan's theorem on weakly convergent subsequences of weakly compact sequences and, moreover, a direct purely "linear" proof can be given.

References

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