



Vladimir I. GURARIY, (Gurariy@aol.com), Department of Mathematics, Kent State University, Kent, OH 44242, USA, *Linability and Spaceability of sets in Function Spaces*.

ABSTRACT. The set M in linear topological space X is said to be linable (corresp., spaceable) if there exists a infinite-dimensional linear manifold (corresp. subspace) Y in X such that Y is subset in M . Report is devoted to review of mostly recent results and unsolved problems of author and of P. Enflo, M. Kadec, V. Fonf, L. Rodrigues-Piazza and others. These results in particular include the following (last two of them are in process of publishing)

Theorem 1 (V.I.Gurariy, 1966) The set D of all differentiable functions on $[0, 1]$ is not spaceable in $C[0, 1]$

Theorem 2 (V.Fonf, V.I.Gurariy, M.Kadec, 1990) The set of all continuous nowhere differentiable functions on $[0, 1]$ is spaceable in $C[0, 1]$.

Theorem 3. (P.H.Enflo, V.I.Gurariy, 2001) For any infinite-dimensional subspace X in $C[0, 1]$ the set Z of all functions in X with infinitely many zeroes on $[0, 1]$ is spaceable.

Theorem 4. (V.I.Gurariy and coauthors, 2002) The set DNM of all differentiable nowhere monotone functions on $[0, 1]$ is linable and not spaceable in $C[0, 1]$.