

## Abstract - Streszczenie w j. ang.

Title: Local geometric structure of selected Banach function spaces  
Agata Panfil

The dissertation presents results concerning some local geometric properties of such classes of Banach lattices as symmetric spaces and generalized Calderón–Lozanovskii spaces.

For symmetric spaces, there are presented general results of local structure. Some dependencies between having some properties by an element  $x$  and having them by its nonincreasing rearrangements are discussed.

In the thesis, there are considered also properties of points of particular symmetric spaces, i. e. Lorentz spaces  $\Gamma_{p,w}$  and  $\Lambda_{p,w}$ . There are presented necessary and sufficient conditions for monotonicity points and order continuous points. Those results are applied to Orlicz–Lorentz spaces  $\Lambda_{\phi,w}$ . Corollaries concerning adequate global properties for spaces  $\Gamma_{p,w}$  and  $\Lambda_{p,w}$  are also shown.

In the sequel, there are presented results for nonsquare points in spaces  $\Gamma_{p,w}$  together with applications to such global properties for  $\Gamma_{p,w}$  space and its subspace of order continuous elements.

Additionally, the local best dominated approximation problems in Banach lattices and symmetric spaces are discussed.

The last part of the dissertation is devoted to studies of order continuity of an element of generalized Calderón–Lozanovskii spaces. Analogical, well known results of global properties for special cases of spaces, i.e. Calderón–Lozanovskii and Orlicz–Lorentz spaces, are concluded.

*Agata Panfil*