NEW RESULTS IN ANALYSIS OF ORLICZ-LORENTZ SPACES

HYUNG-JOON TAG

Abstract. In this talk, we investigate the existence of closed vector subspaces (i.e. spaceability) in various nonlinear subsets of Orlicz-Lorentz spaces $\Lambda_{\varphi,w}$ equipped with the Luxemburg norm. If a family of Orlicz functions $(\varphi_n)_{n=1}^{\infty}$ satisfies a certain order relation with respect to a given Orlicz function φ, the subset of the order-continuous subspace $(\Lambda_{\varphi,w})_a$ whose elements do not belong to $\cup_{n=1}^{\infty}\Lambda_{\varphi_n,w}$ is spaceable. Furthermore, it is shown that this subset is either residual or empty. If an Orlicz function φ does not satisfy the growth condition Δ_2, the subset $\Lambda_{\varphi,w} \setminus (\Lambda_{\varphi,w})_a$ is also spaceable. The talk consists of an introduction to Orlicz-Lorentz spaces and providing necessary notions to study the spaceability of the aforementioned subsets of Orlicz-Lorentz spaces. This talk is based on a joint work with Luis Bernal-Gonzaléz, Daniel Rodríguez-Vidanes, and Juan B. Seoane-Sepúlveda.

Sejong University, Republic of Korea
Email address: hjtag4@gmail.com