

Manjul Gupta, Indian Institute of Technology.

Title: On the Representation of Lorentz Sequence Class type Operators

Abstract: For a continuous, strictly increasing, subadditive function $\psi : [0, \infty) \rightarrow [0, \infty)$ satisfying $\psi(0) = 0$; we consider the weighted generalized Lorentz sequence classes

$$\ell_{p,q}^{v,\omega,\psi} = \{ \{x_n\} \in c_0 : \left\{ \sum_{k=1}^{\infty} [k^{1/p-1/q} v_k \psi(\omega_k s_k(x))]^q \right\}^{1/q} < \infty \},$$

for $0 < p \leq \infty$, $0 < q < \infty$; and

$$\ell_{p,\infty}^{v,\omega,\psi} = \{ \{x_n\} \in c_0 : \sup_{k \in \mathbb{N}} k^{1/p} v_k \psi(\omega_k s_k(x)) < \infty \},$$

for $0 < p \leq \infty$, $q = \infty$, where $v_n = (1 + \log n)^\alpha$, $n \geq 1$ or $v_n = (1 + \log \log n)^\alpha$, $n \geq 2$, $\alpha \in \mathbb{R}$; and give representations theorems for bounded linear operators whose sequences of approximation numbers belong to these classes. Here $\{s_n(x)\}$ is the sequence of decreasing rearrangement of $\{|x_n|\}$, $\{x_n\} \in c_0$.

This is a joint work with L.R. Acharya.