

## Small Subspaces of $L_p$

**Abstract:** The study of “small subspaces” of  $L_p$  ( $2 < p < \infty$ ) was initiated in 1961 by Kadets and Pelczyński who proved that if  $X$  is an infinite dimensional subspace of  $L_p$  then either  $X$  is isomorphic to  $\ell_2$  and the  $L_2$ -norm is equivalent to the  $L_p$ -norm on  $X$ , or for all  $\varepsilon > 0$   $X$  contains a subspace  $Y$  which is  $1 + \varepsilon$ -isomorphic to  $\ell_p$ . In this talk we will give an overview on the history of the study of subspaces of  $L_p$ , and then present a new result recently obtained by the author in joint work with R. Haydon and E. Odell. We will give an intrinsic characterization of the property of a subspace of  $L_p$  to embed into  $\ell_2 \oplus \ell_p$  and prove that if a subspace of  $L_p$  does not embed into  $\ell_2 \oplus \ell_p$  it must contain the  $\ell_p(\ell_2)$ .