Arithmetic means and convex sets in Banach spaces

Pedro Tradacete

Universidad Carlos III de Madrid

A subset A of a Banach space is called Banach-Saks when every sequence in A has a Cesàro convergent subsequence, i.e. a subsequence whose arithmetic means are convergent. Our interest here focusses on the following problem: is the convex hull of a Banach-Saks set again Banach-Saks? By means of a combinatorial argument, we will see that in general the answer is negative. However, sufficient conditions will also be given in order to obtain positive results.

This is a joint work with C. Ruiz (UCM) and J. López-Abad (ICMAT).