

APPROXIMATING COMPACT SUBSETS OF BANACH FUNCTION SPACES BY HOMOGENEOUS MAPS

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ABSTRACT. In this talk we show an approximation technique for compact sets of Banach function spaces by means of simple homogeneous maps with some particular structure. As a consequence we obtain a procedure for approximating (weakly) compact operators by means of homogeneous maps. The lack of linearity in our class of canonical single maps allows to avoid the use of approximation properties.

In order to expose these ideas, we will recall some classical descriptions of weakly compact and compact subsets of Banach spaces (Grothendieck, Fremlin,...) and some well-known factorization and domination theorems for compact operators. We will use also some particular Banach lattice tools, as p -convexifications or Maurey-Rosenthal type theorems.