



# New examples of $K$ -monotone weighted Banach couples

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Some new examples of  $K$ -monotone couples of the type  $(X, X(w))$ , where  $X$  is a symmetric space on  $[0, 1]$  and  $w$  is a weight on  $[0, 1]$ , are presented. Based on the property of the  $w$ -decomposability of a symmetric space we show that, if a weight  $w$  changes sufficiently fast, all symmetric spaces  $X$  with non-trivial Boyd indices such that the Banach couple  $(X, X(w))$  is  $K$ -monotone belong to the class of ultrasymmetric Orlicz spaces. If, in addition, the fundamental function of  $X$  is  $t^{1/p}$  for some  $p \in [1, \infty)$ , then  $X = L_p$ . At the same time a Banach couple  $(X, X(w))$  may be  $K$ -monotone for some non-trivial  $w$  in the case when  $X$  is not ultrasymmetric. In each of the cases where  $X$  is a Lorentz, Marcinkiewicz or Orlicz space we have found conditions which guarantee that  $(X, X(w))$  is  $K$ -monotone.

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