



Yakov Alber (alberya@tx.technion.ac.il), Department of Mathematics, Technion - Israel Institute of Technology, Haifa 32000, Israel , ***James orthogonality and orthogonal decompositions of Banach spaces.***

ABSTRACT. In the present talk we establish decomposition of a uniformly convex and uniformly smooth Banach space B in the form $B = M \uplus J^*M^\perp$, where M is an arbitrary subspace in B , M^\perp is its annihilator (subspace) in dual space B^* , $J^* : B^* \rightarrow B$ is normalized duality mapping in B^* . The sign \uplus denotes James-orthogonal summation (in fact, it is the direct sum of the subspace M and nonlinear smooth manifold J^*M^\perp). By analogy, $B^* = M^\perp \uplus JM$, where $J : B \rightarrow B^*$ is normalized duality mapping in B . In a Hilbert space H these representations coincide with the classical decomposition in a shape of direct sum of the subspace M and its orthogonal complement $M^\perp : H = M \oplus M^\perp$.