



Victor LOMONOSOV (lomonoso@mcs.kent.edu),
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Bishop-Phelps Theorem in Complex Spaces.***

ABSTRACT. If S is a subset of a Banach space X , then a nonzero functional f is a support functional for S and a point x in S is a support point of S if f attains maximum of absolute value at the point x . In 1958 Victor Klee asked if each closed bounded convex subset of a Banach space must have a support point. In 1961 E.Bishop and R.R.Phelps in their fundamental paper proved that the set of support functionals for a closed bounded convex subset S in a real Banach space X is norm dense in the dual space. We are going to present a construction of a complex Banach space X with a closed bounded convex subset S such that the set of the support points of S is empty. We show also that if the Bishop-Phelps Theorem is correct for a uniform dual algebra R of operators in a Hilbert space, then the algebra R is selfadjoint.