Bishop-Phelps theorem and some extensions

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Abstract

The famous Bishop-Phelps theorem asserts that the set of norm attaining functionals of a bounded closed convex subset C of a Banach space X is dense in the dual of X, and the support points are dense in the boundary of C. In the case that C is the unit ball of X, this property is called subreflexivity. B. Bollobas has found a method to simultaneously approximate functionals and points in the boundary of C by support functionals and support points. Results of this kind are called of Bishop-Phelps-Bollobas type (Bi-Phe-Bol). J. Lindenstrauss showed that a Bi-Phe theorem is not always valid in the space $L(X, Y)$, and initiated the study of these type of results for spaces of operators. Later on, Bi-Phe-Bol results were considered as well. We shall present a short survey of these results and some recent results by Kadets, Martin and Soloviova on Bi-Phe results for spaces of Lipschitz functions (a nonlinear version of Bi-Phe theorem).