A BISHOP-PHELPS-BOLLOBÁS THEOREM FOR BOUNDED ANALYTIC FUNCTIONS AND THE DISC ALGEBRA

ARYAMAN SENSARMA
ASSISTANT PROFESSOR
NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

Abstract

The Bishop-Phelps-Bollobás property talks about the denseness of norm attaining operators from X into itself in the Banach space of all bounded linear operators from X into itself, that is, $\overline{\mathcal{NA}(X)} = \mathcal{B}(X)$, where X is a Banach space. In general, it is not true. The first counterexample was observed by J. Lindenstrauss (1963). Afterward, this question has been investigated in several Banach Spaces. Let $H^\infty(\mathbb{D})$ and $A(\mathbb{D})$ be commutative Banach algebras comprising all bounded analytic functions on the open unit disc and those extending to continuous functions on the closure of the unit disc, respectively. In this talk, we demonstrate that the Bishop-Phelps-Bollobás property holds for $\mathcal{B}(H^\infty(\mathbb{D}))$. As an application, we also discuss the Bishop-Phelps-Bollobás property for operator ideals of $\mathcal{B}(H^\infty(\mathbb{D}))$. Additionally, we present that, under the assumption of equicontinuity at a point in $\partial\mathbb{D}$, the Bishop-Phelps-Bollobás property holds for $\mathcal{B}(A(\mathbb{D}))$.