

# Bishop-Phelps Theorem for operators

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## Abstract

We report on joint work with María Acosta, Richard Aron, and Domingo García. Our talk is based on our papers [1, 2].

The classical Bishop-Phelps theorem (1961) states that for any Banach space  $X$  the set of linear forms that attain their norms is always dense in  $X^*$ . This was improved by Bollobas (1970) showing that the points in which the norms are attained can be controlled very nicely. On the other hand Lindenstrauss (1963) proved that for certain Banach spaces  $X$  and  $Y$ , the subset of norm attaining operators from  $X$  into  $Y$  is not norm dense in the space of all continuous and linear operators  $L(X, Y)$ . In this talk we report on recent work about when it is possible to give Bishop-Phelps-Bollobas type results for operators and also about a general Lindenstrauss type theorem: The set of multilinear mappings on Banach spaces such that all their Arens extensions attain the norm are dense with the supremum norm in the space of all continuous multilinear mappings.

## References

- [1] M.D. Acosta, D. García and M. Maestre, A multilinear Lindenstrauss theorem, *Journal of Functional Analysis* **235** (2006), 122-136.
- [2] M.D. Acosta, R. Aron, D. García and M. Maestre, Bishop-Phelps-Bollobás Theorem for operators, *Journal Functional Analysis*. **254** (2008), 2780-2799.