On the Maximal Operator Ideal Associated with a Tensor Norm Defined by Interpolation Spaces

M. E. Puerta and G. Loaiza

Abstract. The classical approach to studying operator ideals using tensor norms mainly focuses on those tensor norms and operator ideals defined by means of \( \ell_p \) spaces. In a previous paper, an interpolation space, defined via the real method and using \( \ell_p \) spaces, was used to define a tensor norm, and the associated minimal operator ideals were characterized. In this paper, the next natural step is taken, that is, the corresponding maximal operator ideals are characterized. As an application, necessary and sufficient conditions for the coincidence of the maximal and minimal ideals are given. Finally, the previous results are used in order to find some new metric properties of the mentioned tensor norm.

Received by the editors December 13, 2007.
Published electronically July 26, 2010.
The writing of this paper was supported by EAFIT University.
AMS subject classification: 46M05, 46M35, 46A32.
Keywords: Maximal operator ideals, Ultraproducts of spaces, interpolation spaces.