

On the Regularity of the Multisublinear Maximal Functions

Feng Liu and Huoxiong Wu

Abstract. This paper is concerned with the study of the regularity for the multisublinear maximal operator. It is proved that the multisublinear maximal operator is bounded on first-order Sobolev spaces. Moreover, two key point-wise inequalities for the partial derivatives of the multisublinear maximal functions are established. As an application, the quasi-continuity on the multisublinear maximal function is also obtained.