## 1086-46-2838 Antonio J. Guirao and Olena Kozhushkina\* (okozhush@math.kent.edu), Department of Mathematical Sciences, Kent State University, Kent, OH 44242. On the Extension of the Bishop-Phelps-Bollobás Theorem.

The Bishop-Phelps theorem states that the set of linear functionals that attain their norm is dense in the dual of a Banach space. The question of generalizing this result to the operators on Banach spaces has been of interest for almost fifty years and has been studied extensively. In 1970, B.Bollobás provided a quantitative extension of the Bishop-Phelps theorem. We investigate the Bishop-Phelps-Bollobás property for numerical radius. Also, we give a constructive proof of the Bishop-Phelps-Bollobás theorem for  $l_1$ . (Received September 25, 2012)