

Banach J. Math. Anal. 5 (2011), no. 2, 6–14

BANACH JOURNAL OF MATHEMATICAL ANALYSIS ISSN: 1735-8787 (electronic) www.emis.de/journals/BJMA/

QUASI-MULTIPLIERS OF THE DUAL OF A BANACH ALGEBRA

M. ADIB¹, A. RIAZI^{2*} AND J. BRAČIČ³

Communicated by M. Brešar

ABSTRACT. In this paper we extend the notion of quasi-multipliers to the dual of a Banach algebra A whose second dual has a mixed identity. We consider algebras satisfying weaker condition than Arens regularity. Among others we prove that for an Arens regular Banach algebra which has a bounded approximate identity the space $QM_r(A^*)$ of all bilinear and separately continuous right quasi-multipliers of A^* is isometrically isomorphic to A^{**} . We discuss the strict topology on $QM_r(A^*)$ and apply our results to C^* -algebras and to the group algebra of a compact group.

^{1,2} Department of Mathematics and Computer Science, Amirkabir University of Technology, P. O. Box 15914, Tehran 91775, Iran.

E-mail address: madib@aut.ac.ir E-mail address: riazi@aut.ac.ir

 3 IMFM, University of Ljubljana, Jadranska ul. 19, SI-1000, Ljubljana, Slovenia.

E-mail address: janko.bracic@fmf.uni-lj.si

Date: Received: 13 July 2010; Revised: 9 September; Accepted: 8 October 2010. * Corresponding author.

²⁰¹⁰ Mathematics Subject Classification. Primary 47B48; Secondary 46H25.

Key words and phrases. Quasi-multiplier, multiplier, Banach algebra, second dual, Arens regularity.