

Banach J. Math. Anal. 8 (2014), no. 1, 64–88

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

## COMPOSITION OPERATORS BETWEEN WEIGHTED BERGMAN SPACES WITH ADMISSIBLE BÉKOLLÉ WEIGHTS

AJAY K. SHARMA<sup>1</sup> AND SEI-ICHIRO UEKI<sup>2\*</sup>

Communicated by T. Sugawa

ABSTRACT. We study composition operators acting between weighted Bergman spaces with admissible Békollé weights. The boundedness and compactness of composition operators are characterized in terms of the generalized Nevanlinna counting function associated with the inducing map of the composition operator and the associated weight function of Bergman space. For a special case, we also give the estimate of the essential norm.

 $^1$  School of Mathematics, Shri Mata Vaishno Devi University, Kakryal, Katra-182320, J&K, India.

*E-mail address*: aksju\_76@yahoo.com

<sup>2</sup> FACULTY OF ENGINEERING, IBARAKI UNIVERSITY, HITACHI 316-8511, JAPAN. *E-mail address:* sei-ueki@mx.ibaraki.ac.jp

Date: Received: 9 January 2013; Accepted: 25 April 2013.

<sup>\*</sup> Corresponding author.

<sup>2010</sup> Mathematics Subject Classification. Primary 47B33; Secondary 30H20.

*Key words and phrases.* Composition operators, Bergman spaces, generalized Nevanlinna counting functions.