



Ann. Funct. Anal. 2 (2011), no. 1, 100–104

ANNALS OF FUNCTIONAL ANALYSIS

ISSN: 2008-8752 (electronic)

URL: www.emis.de/journals/AFA/

ALUTHGE TRANSFORMS OF (\mathcal{C}_p, α) -HYPONORMAL OPERATORS

JUNXIANG CHENG¹ AND JIANGTAO YUAN^{2,1*}

Communicated by J. I. Fujii

ABSTRACT. Recently, the class of (\mathcal{C}_p, α) -hyponormal operators is introduced and the Aluthge transforms of such operators is discussed by some researchers. This paper is to give a further development of the Aluthge transforms of (\mathcal{C}_p, α) -hyponormal operators by using Loewner-Heinz inequality, Furuta inequality and Lauric's lemma. Especially, it is shown that, if $p \geq 1$, $\alpha \geq 1/2$ and T is (\mathcal{C}_p, α) -hyponormal, then the Aluthge transform $T(1/2, 1/2)$ is $(\mathcal{C}_{4p\alpha/\beta}, \beta)$ -hyponormal where $0 < \beta \leq 1$ and $T(1/2, 1/2) = |T|^{1/2}U|T|^{1/2}$.

¹ SCHOOL OF MATHEMATICS AND INFORMATION SCIENCE, HENAN POLYTECHNIC UNIVERSITY, JIAOZUO 454000, HENAN PROVINCE, CHINA.

E-mail address: cjx@hpu.edu.cn

² COLLEGE OF MATHEMATICS AND INFORMATION SCIENCE, SHAANXI NORMAL UNIVERSITY, XIAN 710062, SHAANXI PROVINCE, CHINA.

E-mail address: yuanjiangtao02@yahoo.com.cn

Date: Received: 28 January 2011; Accepted: 17 April 2011.

* Corresponding author.

2010 *Mathematics Subject Classification.* Primary 47B20; Secondary 47A63.

Key words and phrases. Loewner-Heinz inequality, Furuta inequality, hyponormal operator, Aluthge transform, Schatten p -class.