ALUTHGE TRANSFORMS OF \((C_p, \alpha)\)-HYPONORMAL OPERATORS

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Abstract. Recently, the class of \((C_p, \alpha)\)-hypormal 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 \((C_p, \alpha)\)-hypormal 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 \((C_p, \alpha)\)-hypormal, then the Aluthge transform \(T(1/2, 1/2)\) is \((C_{4p\alpha/\beta}, \beta)\)-hypormal where \(0 < \beta \leq 1\) and \(T(1/2, 1/2) = |T|^{1/2}U|T|^{1/2}\).

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