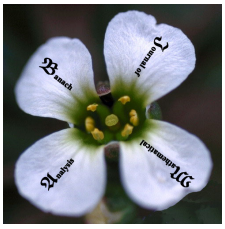

Banach J. Math. Anal. 6 (2012), no. 2, 192–203

Banach Journal of Mathematical Analysis
ISSN: 1735-8787 (electronic)
www.emis.de/journals/BJMA/

SQUARE ROOT FOR BACKWARD OPERATOR WEIGHTED SHIFTS WITH MULTIPLICITY 2

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Communicated by J. A. Ball

Abstract. As is well-known, each positive operator T acting on a Hilbert space has a positive square root which is realized by means of functional calculus. However, it is not always true that an operator have a square root. In this paper, by means of Schauder basis theory we obtain that if a backward operator weighted shift T with multiplicity 2 is not strongly irreducible, then there exists a backward shift operator B (maybe unbounded) such that $T = B^2$. Furthermore, the backward operator weighted shifts in the sense of Cowen-Douglas are also considered.

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Date: Received: 9 July 2011; Revised: 5 May 2012; Accepted: 4 June 2012.
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2010 *Mathematics Subject Classification.* Primary 47B37; Secondary 46A35.
Key words and phrases. backward operator weighted shifts with multiplicity 2, unconditional basis, strongly reducible operator.