Theme Session: Physics & Mathematical Science

A Study of k-generalized Frames in Hilbert Space

G. Upender Reddy

Department of Mathematics, Mahatma Gandhi University, Nalgonda, T.S
upendermathsmgu@gmail.com

Abstract

K-frames were recently introduced by Găvruţa in Hilbert spaces to study atomic systems with respect to a bounded linear operator. K-g-frames are more general than of g-frames in Hilbert spaces. Some results on k-g-frames are studied. We proved that If $\{\Lambda_j\}_{j\in J}$ is a $K_1 - g - frame\ and\ K_2 - g - frame\ for H$ then $\{\Lambda_j\}_{j\in J}$ is a $(\alpha K_1 + \beta K_2) - g - frame\ for\ H$ and $K_1 K_2 - g - frame\ for\ H$.

Mathematics Subject Classification (2010):42C15

Key words: frame: g-frame, k-g-frame

References:

[1]. P.G. Casazza, "The Art of Frame theory", Taiwanese Journal of Mathematics Vol. 4, No.2(2000), pp 129-201.

[2]. Dingli Hua and Yongdong Huang, k-G-Frames and Stability of K-G-Frames in Hilbert Spaces, J.Korean Math, Soc,53(2016), No.6,pp.1331-1345.

[3]. Fahimeh Arabyani Neyshaburi and Ali Akber Arefijamaal, Construction for K-frames and their Duals in Hilbert Spaces, The extended abstracts of The 4th Seminar on Functional Analysis and its Applications, 2-3rd March 2016, Ferdowsi University of Mashhad, Iran.

[4]. L.Gavruta, Frames for Operators, Appl.Comput. Harmon. Anal. 32(2012),139-144.

[5]. D. Han, and D.R. Larson, “Frames, Bases and Group Representations”, Memories, Ams Nov 7(2000), Providence RI.

[6]. A. Najati, and A. Rahimi, “Generalized frames in Hilbert spaces”, Bulletin of the Iranian Mathematical Society, Vol. 35, No. 1(2009), pp. 97-109.

[7]. W.Sun, G-Frames and G-Riesz bases, J. Math. Annal. Appl, 322(2006), No.1, 437-452.

[8]. Y.Zhou and Y. Zhu, K-g-frames and dual g-frames for closed subspaces, Acta Math, Sinica, 56(2013), No.5, 799-806.

[9}. G.U. Reddy and N.G.Reddy, Some Results on g-frame Operator in Hilbert Space, Int. J. Contemp. Math. Sciences, Vol.5, 2010, No.40, 1977-1984.