

1120-42-26

**Bin Han\*** (bhan@ualberta.ca), Dept of Mathematical and Statistical Sciences, University of Alberta, Edmonton, Alberta T6G 2G1, Canada. *Tight framelets and refinable structure*. Preliminary report.

It is widely known that refinable (vector) functions play a central role in wavelet theory for constructing various wavelets or framelets. A natural question is: where are the refinable functions from? In this talk, we study nonhomogeneous tight framelets and we shall completely characterize nonhomogeneous tight framelets in terms of their refinable structures and filter banks. We shall see that refinable (vector) functions, filter banks and (generalized) multiresolution analysis naturally appear in the study of nonhomogeneous tight framelets. The relations among multiresolution analysis, refinable structure, and wavelet functions will also be discussed. As a byproduct, we answered a question asked by Baggett, Jorgensen, Merrill and Packer in 2005. (Received January 21, 2016)