1014-42-464 **Qiyu Sun***, Department of Mathematics, University of Central Florida, Orlando, FL 32828.

Oversampling a tight affine frame. Preliminary report.

Let M be a dilation matrix, Ψ be a finite family of L^2 -functions, and P be an oversampling matrix such that PMP^{-1} has integer entries. In this talk, we discuss the following two problems:

Problem 1: Find all oversampling matrices P such that the oversampled affine system $X^P(\Psi, M)$ is a tight frame whenever the affine system $X(\Psi, M)$ generated by Ψ is.

Problem 2: Given dilation matrix M and oversampling matrix P, find all tight affine frames $X(\Psi, M)$ such that the oversampled affine system $X^P(\Psi, M)$ is a tight frame.

This talk is based on a joint work with C. K. Chui. (Received September 16, 2005)