1067-42-1309   **Bin Han*** (`bhan@math.ualberta.ca`), Department of Mathematical and Statistical Sc, University of Alberta, Edmonton, AB T6G 2G1, Canada. *Wavelets and Framelets in Sobolev Spaces.* Preliminary report.

In this talk, we shall present some recent results on wavelets and framelets in function spaces such as Sobolev spaces, which are of particular interest in the wavelet applications in image processing and numerical solutions to differential equations. We shall present some general results on wavelets and framelets in Sobolev spaces which are derived from multivariate refinable functions. Several examples will be given to show that it is very easy to construct multivariate wavelet frames in Sobolev spaces. If time permits, we will also present some theoretical results on frequency-based framelets in the distribution space and directional tight framelets that are of interest in image denoising. Related references are available at http://www.ualberta.ca/ bhan/publ.htm (Received September 20, 2010)