The Feichtinger Conjecture for Wavelet Frames, Gabor Frames and Frames of Translates

Marcin Bownik and Darrin Speegle

Abstract. The Feichtinger conjecture is considered for three special families of frames. It is shown that if a wavelet frame satisfies a certain weak regularity condition, then it can be written as the finite union of Riesz basic sequences each of which is a wavelet system. Moreover, the above is not true for general wavelet frames. It is also shown that a sup-adjoint Gabor frame can be written as the finite union of Riesz basic sequences. Finally, we show how existing techniques can be applied to determine whether frames of translates can be written as the finite union of Riesz basic sequences. We end by giving an example of a frame of translates such that any Riesz basic subsequence must consist of highly irregular translates.