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**Yi Grace Wang\*** (ywang392@syr.edu), 215 Carnegie Hall, Syracuse, NY 13244, and **Ingrid Daubechies** and **Hau-Tieng Wu**. *ConceFT: Concentration of Frequency and Time via a multitapered synchrosqueezed transform*.

Time-frequency representations provide a powerful tool for the analysis of time series signals. Techniques that decompose the time-dependent signals into multiple oscillatory components, with time-varying amplitudes and instantaneous frequencies are very appealing and have been shown to be useful in a wide range of applications including geophysics, biology, medicine, finance and social dynamics. In this talk, I'll give an introduction to time-frequency representations and review existing methods for the previously described decomposition. Then I'll present a new method that applies the multitapering with synchrosqueezed transform. Numerical experiments as well as a theoretical analysis will be demonstrated to assess its effectiveness. (Received March 11, 2017)