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*Stockwell Transform as the Instantaneous Frequency Estimator*

Instantaneous frequency (IF) is a critical parameter in describing non-stationary signals whose frequency characteristics vary over time.

In real application, it is usually difficult to obtain accurate IF estimation of signals in terms of their multi-component feature and the presence of noise. One kind of popular and useful approach for measuring the IF is based on the property of time-frequency representation. In the talk, we give a short review about two basic techniques of them: peak detection method and the reassignment method. And then we extend such technique with the recently developed time-frequency representation: the Stockwell transform. The improvement of our new methodologies are shown by numerical simulations.