Extraction/Filtration of Transients Embedded in Stationary Signals Using Wavelets; Focus on Extraction of Frequency Response Functions

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Abstract:
Recent trends in signal processing have led to the discovery and implementation of wavelets as tools of many different applications. This paper focuses on their use as a tool for transient extraction. From the Discrete Wavelet Transform (DWT), specific coefficients are picked using a coherence-based criterion. These coefficients are then taken back to the time domain as the extracted transient. If the extracted transient is a response from a measured input, then a frequency response function can be formulated.