National Aeronautics and Space Administration
www.nasa.gov

Computing Frequency By Using Generalized Zero-Crossing Applied To Intrinsic Mode Functions

Case Number: GSC- 14608-1
Patent Number: 6,990,436
Patent Exp. Date: 11/28/2023

DESCRIPTION

This is a computer-implemented analysis of physical signal. The method involves generating a set of mean frequency functions by computing the weighted mean frequency at a point along the time scale for one of the intrinsic mode functions extracted by recursively sifting the physical signal through empirical mode decomposition and continuing to perform the computing step for all the intrinsic mode functions. The generated set of mean frequency functions are then displayed.

FEATURES AND BENEFITS

- As the mean frequency is localized down to quarter a wave period, the values obtained serve as the best local mean over the period to which it applies.
- The approach also gives a statistical measure of the scattering of the frequency value.

APPLICATIONS

- Adaptive Filtering
- Feature Extraction
- Prediction
- Pattern Recognition
- Spectrum Analysis

FOR MORE INFORMATION

If you are interested in more information or want to pursue transfer of this technology, GSC-14608-1, please contact:

Darryl Mitchell
Technology Manager
NASA Goddard Space Flight Center
Innovative Partnerships Program Office
darryl.r.mitchell@nasa.gov
301-286-5169