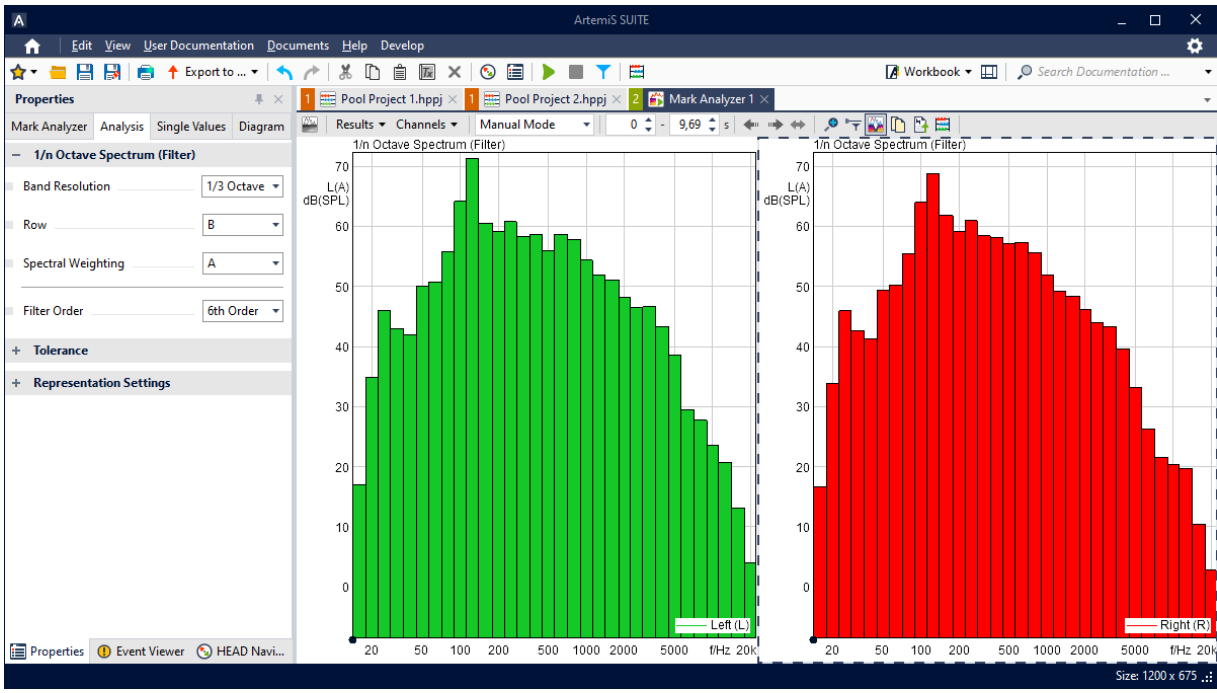
HEAD acoustics

DATA SHEET



ArtemiS SUITE
Signal Processing

Code 51007

ASP 007
Octave Analysis

Octave Analysis of ArtemiS SUITE enables the use of recursive filters for the calculation of 1/n octave analyses so that time structures are examined precisely and with a high level of detail.

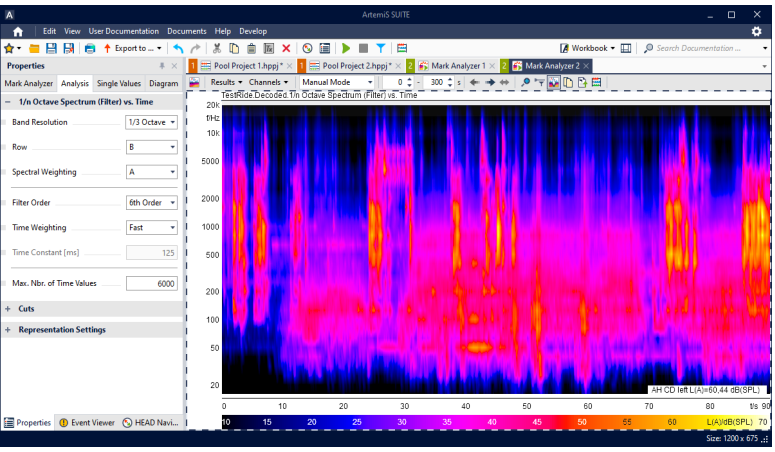
OVERVIEW

ASP 007
Octave Analysis

Code 51007

Octave Analysis uses recursive filters to analyze the level variations of the frequencies contained in the measurement signal. Thus, it is not necessary to decompose the signal into equidistant time blocks, as an FFT requires for a frequency analysis. The result is an unaffected time resolution of the measurement signal in which temporal courses can be analyzed.

As the result of an 1/n octave analysis, either an averaged spectrum or a time- or RPM-dependent spectrogram can be calculated. To mimic human perception, 1/3 octave filters are especially suited, because their bandwidth above 500 Hz approximately corresponds to the “Critical Bands”.



KEY FEATURES

Octave Analysis includes several 1/n octave analyses:

- 1/n Octave Spectrum (Filter)
  - Calculating the 1/n octave spectrum of the input signal – the quadratic mean value for each frequency band is formed
- 1/n Octave Spectrum (Filter) (Peak Hold)
  - Calculating the 1/n octave spectrum of the input signal1/n Octave Spectrum (Filter) vs. Time
  - Calculating the 1/n octave spectrum of the input signal versus time
- 1/n Octave Spectrum (Filter) vs. RPM
  - Calculating the 1/n octave spectrum of the input signal versus a reference quantity
- Filters of 6th order according to the IEC 61260 series, ANSI S 1.11

The analyses can be used in Pool Projects (APR 010 is required), Automation Projects (APR 050 is required), Standardized Test Projects (APR 220 is required), and Metric Projects (APR 570 is required)

APPLICATIONS

- Fast identification of time structures
- Analysis with a high frequency resolution especially at low frequencies

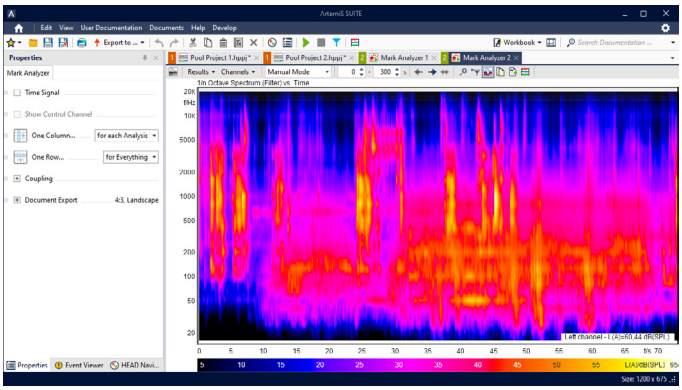
Recursive filters

With the use of recursive filters for 1/n octave analyses, time structures within signals can be identified excellently. Especially at low frequencies, the 1/n octave analysis is characterized by a high frequency resolution.

For the calculation, the sub-bands are gained through a filtering by an arrangement of bandpasses.

1/n Octave Spectrum (Filter) vs. Time

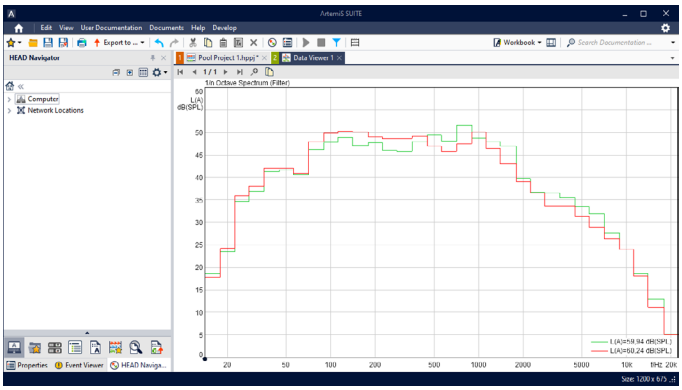
This analysis calculates the 1/n octave spectrum of the input signal versus time.



1/n Octave Spectrum (Filter) vs. Time

1/n Octave Spectrum (Filter)

The 1/n Octave Spectrum (Filter) analysis calculates the 1/n octave spectrum of the input signal.



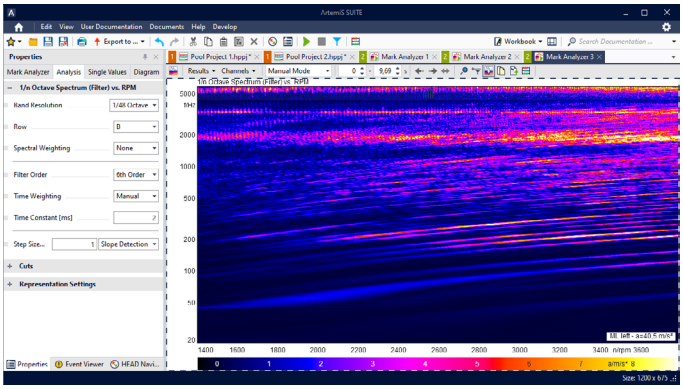
1/n Octave Spectrum (Filter)

1/n Octave Spectrum (Filter) (Peak Hold)

This analysis calculates the 1/n octave spectrum of the input signal.

1/n Octave Spectrum (Filter) vs. RPM

This analysis calculates the 1/n octave spectrum of the input signal versus a reference quantity.



1/n Octave Spectrum (Filter) vs. RPM

Required: APR Framework (Code 50000)
and/or: HEAD System Integration and Extension (ASX) programming interfaces

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Contact Information

Ebertstrasse 30a
52134 Herzogenrath, Germany
Phone: +49 (0) 2407 577-0
E-Mail: sales@head-acoustics.com
Website: www.head-acoustics.com