LIST OF ABBREVIATIONS
IN THE FIELD
OF
OPERATIONAL MODAL ANALYSIS

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OPERATIONAL MODAL ANALYSIS

Operational Modal Analysis (OMA) is a technique capable of estimating the modal parameters (mode shapes, natural frequencies and damping ratios) without knowing and/or controlling the input excitation (forces which are naturally present during the operation of the structure). Operational Modal Analysis is a Multiple Input Multiple Output (MIMO) technique, which means that closely spaced modes and repeated modes can be estimated.

Nowadays, this technique is known as OPERATIONAL MODAL ANALYSIS. However, different or alternative names were used in the past:

- Output Only Modal Analysis.
- Ambient Response Analysis.
- Ambient Modal Analysis.
- In-Operation Modal Analysis.
- Natural Input Modal Analysis.
- Natural Excitation Modal Analysis

When the natural excitation is combined with artificial excitation, then it receives different names:

- Operational Modal Analysis with Exogenous Inputs (OMAX)
- Operational Modal Analysis with Harmonic excitation (OMAH)

List of abbreviations

AC	Alternate Current
ADC	Analog-to-Digital Converter
AMI	Ambient modal identification
AR	Auto Regressive
ARMA	Auto Regressive Moving Average
ARMAV	Auto-Regressive Moving Average Vector
AVT	Ambient Vibration Test
BFD	Basic Frequency Domain
BR	Balanced Realization
BSS	Blind Source Separation
CMIF	Complex Mode Indicator Function
CMRR	Common Mode Rejection Ratio
CoMAC	Coordinate Modal Assurance Criterion
Cov-SSI	Covariance Driven Stochastic Subspace Identification
CVA	Canonical Variate Analysis
dB	Decibel
DC	Direct Current
DD-SSI	Data Driven Stochastic Subspace Identification
DFT	Discrete Fourier Transform
DOF	Degree of Freedom
DR	Dynamic range
ECOMAC	Enhanced Coordinate Modal Assurance Criterion
EFDD	Enhanced Frequency Domain Decomposition
EMA	Experimental Modal Analysis
EMT	Experimental Modal Testing
ERA	Eigensystem Realization Algorithm
EVD	Eigenvalue Decomposition
FDD	Frequency Domain Decomposition
FE	Finite Element
FEM	Finite Element Method
FFT	Fast Fourier Transform
FIR	Finite Impulse Response (filter)
FRF	Frequency Response Function
FSDD	Frequency Spatial Domain Decomposition
ICA	Independent Component Analysis
IEPE	Integrated Electronics PiezoElectric
IIR	Infinite Impulse Response (filter)
IRF	Impulse Response Function
ITD	Ibrahim Time Domain
JAD	Joint Approximate Diagonalization
LMFD	Left Matrix Fraction Description
LR	Lower residual (term)
LSB	Least Significant Bit

LSCE	Least Squares Complex Exponential
LSCF	Least Squares Complex Frequency
LSFD	Least Squares Frequency Domain
LTI	Linear Time Invariant
MA	Moving Average
MAC	Modal Assurance Criterion
MDOF	Multi Degree of Freedom
MFD	Matrix Fraction Description
MIF	Mode Indicator Function
MIMO	Multiple Input Multiple Output
MISO	Multiple Input Single Output
MLE	Maximum Likelihood Estimator
MPC	Modal Phase Collinearity
MPD	Mean Phase Deviation
MSF	Modal Scale Factor
NExT	Natural Excitation Techniques
NMD	Normalized Modal Difference
ODS	Operational Deflection Shape
OMA	Operational Modal Analysis
OMAH	Operational Modal Analysis with Harmonic excitation
OMAX	Operational Modal Analysis with eXogenous input
p-LSCF	Poly-reference Least Squares Complex Frequency
PC	Principal Component
PCA	Principal Component Analysis
pdf	Probability density function
PEM	Prediction Error Method
PSD	Power Spectral Density
RD	Random Decrement
RMFD	Right Matrix Fraction Description
rms	Root Mean Square
SDOF	Single Degree of Freedom
SHM	Structural Health Monitoring
SIMO	Single Input Multiple Output
SISO	Single Input Single Output
SNR	Signal-to-noise ratio
SOBI	Second Order Blind Identification
SSI	Stochastic Subspace Identification
SVD	Singular Value Decomposition
TEDS	Transducer electronic data sheet
UMPA	Unified Matrix Polynomial Approach
UPC	**U**nweighted Principal Component
UR	Upper residual (term)
ZOH	Zero Order Hold