List of Symbols

Symbol	Description
abs(l)	Absolute values of the vector *l*
a	Acceleration
A	Approximation coefficients
Ar	Area
α	Scaling parameter
α_{in}	Input vector
β	Scaling parameter
BW	Bandwidth of the signal
C	Capacitance between two plates
C_A	Capacitance on plate A
C_B	Capacitance on plate B
ΔC	Difference between capacitance on plates A and B
d	Distance between capacitive plates
d_o	Initial position of the plate
DW	height of diastolic wave in PPG
D_j	Detailed coefficient vector at level *j*.
D_j^T	Thresholded detailed coefficient vector at level *j*.
D_j^{clean}	Clean (without noise) detailed coefficient vector at level *j*.
ε	Permittivity of the plate-separating material
f	Force
F	Fano factor
f_1	Clean signal
f_2	Denoised signal
fit	Fit coefficient
F_c	Center frequency
F_s	Sampling frequency
g	Acceleration due to the gravity of the Earth
G	Analysis high-pass filter
$\tilde{G}$	Synthesis high-pass filter
H	Analysis low-pass filter
$\tilde{H}$	Synthesis low-pass filter
I	Consecutive upward and downward point
J	Level of decomposition
K	Kurtosis value
l_1	Level 1
l_2	Level 2
m	Mean

m_s	Mass
MAD	Median of absolute value
med_{75}	75th percentile value in absolute sorted vector
MSE	Mean square error
N	Length of the vector
p	Pass-band
Q	Quality factor
Q_i	Quality index for heart sound signal
QT	Electrical systole
QS2	Mechanical systole
r	Redundancy parameter
R	Frequency
s	Scaling factor in wavelet
S	Stop-band
SR	Segmentation rate
SW	height of systolic wave in PPG
t	Shifting parameter in wavelet
T	Threshold value
T_1	Lower threshold value
T_2	Higher threshold value
T_x	Threshold for x-axis signal
T_z	Threshold for z-axis signal
T_{DVP}	Duration between systolic and diastolic peaks
v	Variance
Δx	Displacement in spring position
X	Sparsed signal
$x_{norm}(n)$	nth element in normalised vector x
$x_s^T(n)$	nth element in threholded vector x using soft threshold function
$x(n)$	nth element in signal vector x
$X(k)$	DFT coefficient at frequency R
Y	Output compressed signal
z	Electric impedance
Z	Integers
μ_w	Mean of a signal over a window w
μA	micro-ampere
σ	Noise variance
σ_w^2	Variance of a signal over a window w
$\hat{\sigma}$	Estimated noise variance
Ψ_n	Mother wavelet
Ψ	Sparsifying matrix
ϕ	Sensing matrix
$\mathcal{S}$	Spring constant
$\theta(n)$	Transition band function at nth position