
Table of Acronyms

This table lists the main acronyms used in this book.

Acronym	Meaning
a.a.	almost all
AD	Anno Domini
a.e.	almost everywhere
a.k.a.	also known as
a.s.	almost surely
ACF	AutoCorrelation Function
ASF	Alternate Sequential Filter
BAC	Bearing Area Curve
BC	Before Christ
BRDF	Bidirectional Reflectance Distribution Function
BV	Bounded Variation
BVF	Boundary Vector Field
BVP	Boundary Value Problem
cdf	cumulated (probability) distribution function
CDT	Chamfer Distance Transformation
CE	Convolution Equation
CIE	Commission Internationale de l'Éclairage
CLIP	Classical Linear Image Processing
CLT	Central Limit Theorem
CSR	Complete Spatial Randomness
CWT	Continuous Wavelet Transformation

Acronym	Meaning
DBC	Differential Box-Counting
DCT	Discrete Cosine Transformation
DFT	Discrete Fourier Transformation
DoG	Difference of Gaussian
DST	Discrete Sine Transformation
DT	Distance Transformation
DVD	Dirichlet–Voronoi’s diagram
DWT	Discrete Wavelet Transformation
EDT	Euclidean Distance Transformation
eEDT	exact Euclidean Distance Transformation
EM	Expectation Maximization
ENO	Essentially Non-Oscillatory
EVT	Extreme Value Theory
f.a.a.	for almost all
FBP	Free Boundary Problem
FFT	Fast Fourier Transformation
FMM	Fast Marching Method
FoV	Field of View
GLIP	General Linear Image Processing
GRF	Gibbs Random Field
GRGTF	Gaussian Random Gray-Tone Field
GiRGTF	Gibbs’ Random Gray-Tone Field
H	Homomorphic
HJE	Hamilton–Jacobi’s Equation
HL	Homomorphic Logarithmic
HOT	High Order Terms
HSL	Hue, Saturation and Lightness
HT	Hough Transformation
HU	Hounsfield Unit
HVS	Human Visual System
IBVP	Initial Boundary Value Problem
IDE	Integro-Differential Equation
i.i.d.	independent and identically distributed
iff	if and only if
IE	Integral Equation
IQA	Image Quality Assessment

Acronym	Meaning
IQF	Image Quality Factor
IQM	Image Quality Measure
ISO	International Organization for Standardization
JND	Just Noticeable Difference
JPEG	Joint Photographic Experts Group
KDE	Kernel Density Estimation
KLT	Karhunen–Loève Transformation
KPP	Kolmogorov-Petrovsky-Piskounov's equation
L	Logarithmic
Lab	Lab color space
La*b*	CIE Lab color space
LIP	Logarithmic Image Processing
LoD	Level of Detail
LoG	Laplacian of Gaussian
LRIP	Logarithmic Ratio Image Processing
l.s.c.	lower semi-continuous
LSE	Least Square Errors
M	Multiplicative Homomorphic
MHIP	Multiplicative Homomorphic Image Processing
MPSK	Morphological Pattern Spectrum's Kurtosis
MPSM	Morphological Pattern Spectrum's Mean
MPSS	Morphological Pattern Spectrum's Skewness
MPSV	Morphological Pattern Spectrum's Variance
MRF	Markov Random Field
MRGTF	Markov's Random Gray-Tone Field
MRI	Magnetic Resonance Imaging
MS	Mean Square
MSE	Mean Squared Error
MTF	Modulation Transfer Function
nEDT	non-Euclidean Distance Transformation
nm	nanometer
OSC	Open Set Condition
OTF	Optical Transfer Function

Acronym	Meaning
PCA	Principal Component Analysis
PCF	Pair Correlation Function
PDE	Partial Differential Equation
pdf	probability density function
PDT	Path-generated Distance Transformation
PET	Positron Emission Tomography
PIDE	Partial Integro-Differential Equation
PoI	Point of Interest
Pow	Power
PowIP	Power Image Processing
PSF	Point Spread Function
PSK	Pattern Spectrum Kurtosis
PSM	Pattern Spectrum Expectation
PSNR	Peak Signal-to-Noise Ratio
PSS	Pattern Spectrum Skewness
PSV	Pattern Spectrum Variance
Resp.	Respectively
RoI	Region of Interest
RP	Runge Phenomenon
SBV	Special Bounded Variation
s.c.	simply connected
SDE	Stochastic Differential Equation
SEM	Scanning Electron Microscopy
SI	Le Système International d'unités
SNR	Signal-to-Noise Ratio
SOR	Successive Over relaxation
SPDE	Stochastic Partial Differential Equation
SPIDE	Stochastic Partial Integro-Differential Equation
SSA	Scale Space Axioms
SSIM	Structural dissimilarity
SVD	Singular Value Decomposition
s.t.	such that or so that
TEM	Transmission Electron Microscopy
TV	Total Variation
t.v.s.	topological vector space
US	Ultrasound Imaging
u.s.c.	upper semi-continuous

Acronym	Meaning
WDT	Weighted Distance Transformation
WHT	Walsh-Hadamard Transformation
w.l.o.g.	without loss of generality
w.r.t.	with respect to
ZoI	Zone of Interest