Index

a
acoustical zooming 166
adaptive beamformer 255
aliasing 7, 37
ambience extraction effect 359
ambient gain 331
Ambisonics 75
analysis beamformer 201
artifact 96
artificial neural network 291
audio engine 348
augmentation 352
auralization of measured acoustics 81
avatar 348

b
B-format 75
B-format bus 350
B-format reverberator 352
back-propagation algorithm 300
Bayesian framework 53
BCC see binaural cue coding beamformer 145
beamforming 254, 268
Bessel function 30
binaural cue coding 76
binaural DirAC 117, 155
binaural reproduction 209

center divergence 330
coefficient of variation method 92
comb-filter effect 93
COMEDIE see covariance matrix
eigenvalue diffuseness estimation
complex-valued modulation 7
covariance matrix 17
covariance matrix eigenvalue diffuseness estimation 56
covariance-domain rendering 19
critical sampling 6
critical signals 119
cross-pattern coherence 265
cross-spectrum 269
decorrelation 18
deep neural network 305
delay in audio chain 332
delay-and-sum 31
delay-and-sum beamforming 254
DFT see discrete Fourier transform
diffuse stream 96
diffuse-field equalized HRTFs 210
diffuseness 90
DirAC see directional audio coding
DirAC-monomorph 350
direct gain 331
direction of arrival 74, 162
directional audio coding 89
directional transformation 356
discrete Fourier transform 5
DOA see direction of arrival
DoA see direction of arrival
downsampling 7
Index

e  
enhancement 253

f  
fast Fourier transform 5  
feature extraction 306  
FFT see fast Fourier transform  
filter bank 5  
Frobenius norm 51

g  
Gaussian distribution 54  
ger generalized sidelobe canceler 257

h  
Hankel function 30  
HARPEX 80  
head tracking 117  
hearing aids 118  
higher-order Ambisonics 142  
higher-order DirAC 141  
HO-DirAC see higher-order DirAC  
HOA see higher-order Ambisonics

i  
ICLD see inter-channel level difference  
ideal binary mask 258  
informed spatial filter 171, 256  
intensity 90  
inter-channel level difference 18

l  
least-norm solution 51  
loudspeaker-signal bus 354

m  
microphone self-noise 29  
mono-DirAC 96  
mono-DirAC stream 350  
MPEG Surround 76  
multi-channel filter 162  
multi-wave sound field model 167  
multiple signal classification 61  
multiresolution STFT 120  
MUSIC see multiple signal classification

n  
neural network 291  
NMF see non-negative matrix factorization  
noise 29  
non-diffuse stream 96  
non-negative matrix factorization 218  
non-negative tensor factorization 219  
NTF see non-negative tensor factorization

o  
overfitting 301  
oversampling 6

p  
parametric multi-wave multi-channel  
Wiener filter 172  
parametric stereo 76  
perfect reconstruction 12  
plane-wave decomposition 25, 50  
post-filter 257  
power spectral density 168  
principal component analysis 52  
prototype filter 6  
PSD see power spectral density  
PWD see plane-wave decomposition

q  
QMF see quadrature mirror filter  
quadrature mirror filter 16

r  
radial function 30  
real-valued modulation 7  
regularization 29, 301  
remote presence 364  
reverberator 352  
room impulse responses 81

s  
SAC see spatial audio coding  
SASC see spatial audio scene coding  
SDM see spatial decomposition method  
SH see spherical harmonics  
SHD see spherical harmonic domain  
short-time Fourier transform 9  
shotgun microphone 336  
signal enhancement 253  
single-channel quality 331  
singular value decomposition 52  
SIRR see spatial impulse response rendering  
smoothing 125, 277
Index

sound energy  90
sound intensity  90
sound particle velocity  90
sound pressure  90
sound stage width  330
source separation  216
spaced-array recording  114
sparse solution  51
spatial aliasing  37, 98
spatial analysis  74
spatial audio coding  76
spatial audio effects  356
spatial audio scene coding  78
spatial decomposition method  82
spatial filtering  357
spatial impulse response  81
spatial impulse response rendering  82
spatial manipulation effect  355
spatial modulation  358
spatial modulation effect  357
spatialization  360
spectral floor  278
spectrogram factorization  231
spectrogram model  220
spherical array  25
spherical harmonic domain  145
spherical harmonics  25, 144
STFT see short-time Fourier transform
supervised learning  292
surround microphone  341
sweet-spot translation  356
synthesis beamformer  201

\textbf{t}
target covariance matrix  154, 204
teleconferencing  364
Tikhonov regularization  206
time domain  4
time–frequency domain  3
time–frequency mask  257

\textbf{u}
underfitting  301
undersampling  6
uniform filter bank  6
upmixing  329

\textbf{v}
VBAP see vector base amplitude panning
vector base amplitude panning  75
virtual microphone DirAC  106, 143
virtual reality  347
virtual reality audio engine  348
VM-DirAC see virtual microphone DirAC

\textbf{w}
wave field synthesis  76
WFS see wave field synthesis

\textbf{z}
Zelinski post-filter  257
zooming  166, 356