The Auditory
System and Human
Sound-Localization
Behavior









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# The Auditory System and Human Sound-Localization Behavior

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# **Dedication**

To Dr Dick Donker (Dec 21, 1934–Oct 1, 2014): neurologist, life artist, lover of music, and of auditory science.











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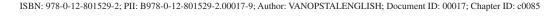
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# **List of Abbreviations**

2AFC Two-alternative forced choice

AC Auditory cortex

AM Amplitude modulation AMP Auditory median plane

AN Auditory nerve

ANN Artificial neural network

AV Audiovisual

AVCN Antero-ventral part of Cochlear Nucleus

BB Black box

BCD Bone-conduction device BM Basilar membrane

BP Band-pass
BS Band-stop

CI Cochlear implant
CN Cochlear nucleus
CNS Central nervous sy

CNS Central nervous system
DCN Dorsal part of Cochlear Nucleus

DTF Directional transfer function
DMF Dynamic movement field

FEF Frontal eye fields FM Frequency modulation

FOV Field of view

FRF Future receptive field FT Fourier transform GBC Globular bushy cell GME Gaze-motor error GWN Gaussian white noise

HA Hearing aid HP High-pass

HRTF Head-related transfer function

HSE Head-shadow effect
IC Inferior colliculus
ICc Central nucleus of IC
ICx External nucleus of IC
IHC Inner hair cell

ILD Interaural level difference

INC Interstitial nucleus of Cajal IOR Inhibition of return

IPD Interaural phase difference

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ISI	Intersaccadic interval
ITD	Interaural time difference
LP	Low-pass
LS	Linear system
LSO	Lateral superior olive
LT	Laplace transform
MAA	Minimum audible angle
MAP	Maximum a-posteriori
MDT	Medial-dorsal thalamus
MF	Movement field
MGB	Medial geniculate body
MI	Multisensory Index
MLB	Medium-lead burst neuron
MLE	Maximum Likelihood Estimate
MNTB	Medial nucleus of the trapezoid body
MSO	Medial superior olive
MVN	Medial vestibular nucleus
NI	Neural integrator
NLS	Nonlinear system
NPH	Nucleus prepositus hypoglossi
OAE	Oto-acoustic emission
OHC	Outer hair cell
OMR	Oculomotor range
OPN	Omni-pause neuron
PG	Pulse generator
PPC	Posterior parietal cortex
PPRF	Para-pontine reticular formation
PSG	Pulse-step generator
PVCN	Postero-ventral part of Cochlear Nucleus
riMLF	rostral interstitial nucleus of the medial longitudinal fasciculus
RM	Reissner's membrane
ROC	Receiver operator characteristic
RT	Reaction time
SBC	Spherical bushy cell
SC	Superior colliculus
SDT	Signal-detection theory
SNR	Signal to noise ratio
SPL	Sound-pressure level
SR	Spontaneous firing rate
SRT	Saccade reaction time
SSD STT	Single-sided deaf(ness) Special to temporal transformation
	Spatial-to-temporal transformation
TM	Tectorial membrane
TOT	Tonotopic to oculocentric transformation

Unilateral Conductive Hearing Loss

Vestibular-ocular reflex

Vector strength

Vectorial pulse generator

**UCHL** 

VOR

VPG

VS





