

Title (en)

REVERBERATION REDUCTION FOR SIGNALS IN A BINAURAL HEARING APPARATUS

Title (de)

ENTHALLEN VON SIGNALEN EINER BINAURALEN HÖRVORRICHTUNG

Title (fr)

SUPPRESSION DE LA RÉVERBÉRATION DE SIGNAUX D'UN DISPOSITIF AUDITIF BIAURICULAIRE

Publication

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Application

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Abstract (en)

[origin: WO2011110239A1] The aim is to propose a more efficient method for reducing reverberation in binaural hearing systems. This has been done by developing a method for obtaining a reduced-reverberation, binaural output signal ($SI(?, \mu)$, $Sr(?, \mu)$) for a binaural hearing apparatus. First of all, a left input signal ($Xl(?, \mu)$) and a right input signal ($Xr(?, \mu)$) are provided. The two input signals are combined to form a reference signal ($Xref(?, \mu)$). The reference signal is used to ascertain spectral weights ($Glate(?, \mu)$), or these weights are provided in another way, in order to use them to reduce late reverberation. To this end, the two input signals have the spectral weight applied to them. Furthermore, a coherency (17) for signal components of the weighted input signals ($SI(?, \mu)$, $Sr(?, \mu)$) is ascertained. Noncoherent signal components of both weighted input signals are then attenuated in order to reduce early reverberation.

IPC 8 full level

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Citation (search report)

See references of WO 2011110239A1

Citation (examination)

- DE 10356063 A1 20050630 - SIEMENS AG [DE]
- US 2005244023 A1 20051103 - ROECK HANS-UELI [CH], et al
- US 2004252852 A1 20041216 - TAENZER JON C [US]
- DOERBECKER M AND ERNST S: "Combination of two-channel spectral subtraction and adaptive Wiener post-filtering for noise reduction and dereverberation", SIGNAL PROCESSING VIII : THEORIES AND APPLICATIONS ; PROCEEDINGS OF EUSIPCO-96, EIGHTH EUROPEAN SIGNAL PROCESSING CONFERENCE ; TRIESTE, ITALY, 10 - 13 SEPTEMBER 1996, ED. LINT, TRIESTE, vol. 2, 10 September 1996 (1996-09-10), pages 995 - 998, XP002578699, ISBN: 978-88-86179-83-6
- LEBART K ET AL: "A NEW METHOD BASED ON SPECTRAL SUBTRACTION FOR SPEECH DEREVERBERATION", ACUSTICA, S. HIRZEL VERLAG, STUTTGART, DE, vol. 87, no. 3, 1 May 2001 (2001-05-01), pages 359 - 366, XP009053193, ISSN: 0001-7884
- HAMACHER Y ED - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "Comparison of advanced monaural and binaural noise reduction algorithms for hearing aids", 2002 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING. PROCEEDINGS. (ICASSP). ORLANDO, FL, MAY 13 - 17, 2002; [IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (ICASSP)], NEW YORK, NY : IEEE, US, vol. 4, 13 May 2002 (2002-05-13), pages IV - 4008, XP010804510, ISBN: 978-0-7803-7402-7
- LOTTER ET AL: "Dual-Channel Speech Enhancement By Superdirective Beamforming", EURASIP JOURNAL OF APPLIED SIGNAL PROCESSING, HINDAWI PUBLISHING CO., CUYAHOGA FALLS, OH, US, vol. 2006, 1 January 2006 (2006-01-01), pages 1 - 14, XP007915506, ISSN: 1110-8657, DOI: 10.1155/ASP/2006/63297

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