

Title (en)

METHOD FOR DETERMINING LINE SPECTRAL FREQUENCIES

Title (de)

VERFAHREN ZUR BESTIMMUNG VON SPEKTRALLINIENFREQUENZEN

Title (fr)

PROCEDE DE DETERMINATION DE FREQUENCES DE RAIES SPECTRALES

Publication

EP 3349212 A1 20180718 (EN)

Application

EP 17151305 A 20170113

Priority

EP 17151305 A 20170113

Abstract (en)

It is disclosed inter alia a method comprising: for determining line spectral pairs for a linear prediction filter whose filter coefficients are linear predictive coefficients determined over a frame of audio samples, wherein the linear prediction filter is expressed as symmetric and antisymmetric polynomials, the zeros of which determine the line spectral pairs of the LP filter, comprising for each symmetric and antisymmetric polynomial: expanding the polynomial and arranging each coefficient of a plurality of coefficients of the expanded polynomial into at least one sum of terms of the same product order; forming a further polynomial, wherein a coefficient of the further polynomial is a value for at least one sum of terms of the same product order for a coefficient of the expanded polynomial; and solving the further polynomial wherein the roots of the further polynomial are line spectral pairs.

IPC 8 full level

G10L 19/04 (2013.01); **G10L 19/07** (2013.01)

CPC (source: EP)

G10L 19/04 (2013.01); **G10L 19/07** (2013.01)

Citation (applicant)

- SOONG; JUANG: "Line Spectrum Pair (LSP) and speech data compression", PROCEEDINGS OF IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING, March 1984 (1984-03-01), pages 1.10.1 - 1.10.4, XP000560468
- "The computation of line spectrum frequencies using Chebyshev polynomials", IEEE TRANSACTIONS ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING, vol. 34, no. 6, 1986, pages 1419 - 1426

Citation (search report)

- [A] EP 0774750 A2 19970521 - NOKIA MOBILE PHONES LTD [FI]
- [A] SUI C: "A real-time implementation for computing line spectral frequencies in speech processing application", INFORMATION, COMMUNICATIONS AND SIGNAL PROCESSING, 1997. ICICS., PROCEEDINGS OF 1997 INTERNATIONAL CONFERENCE ON SINGAPORE 9-12 SEPT. 1997, NEW YORK, NY, USA, IEEE, US, 9 September 1997 (1997-09-09), pages 1172 - 1176, XP010263889, ISBN: 978-0-7803-3676-6, DOI: 10.1109/ICICS.1997.652167
- [A] SHI-HUANG CHEN ET AL: "The computation of line spectrum pair frequencies using Tschirnhaus transform", CIRCUITS AND SYSTEMS, 2009. ISCAS 2009. IEEE INTERNATIONAL SYMPOSIUM ON, IEEE, PISCATAWAY, NJ, USA, 24 May 2009 (2009-05-24), pages 2333 - 2336, XP031479709, ISBN: 978-1-4244-3827-3

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3349212 A1 20180718; WO 2018130742 A1 20180719

DOCDB simple family (application)

EP 17151305 A 20170113; FI 2017050939 W 20171227