Title (en)
Estimating the pitch of a speech signal using an average distance between peaks

Title (de)
Schätzung der Grundfrequenz eines Sprachsignal mittels eines Durchschnitts- Abstands zwischen Spitzen

Title (fr)
Estimation de la fréquence fondamentale dans un signal de parole à l'aide de la distance moyenne entre les pics

Publication
EP 1143413 A1 20011010 (EN)

Application
EP 00610035 A 20000406

Priority
EP 00610035 A 20000406

Abstract (en)
A method of estimating the pitch of a speech signal (2) comprises the steps of dividing the speech signal into segments, calculating for each segment a conformity function, and detecting peaks in the conformity function. The method further comprises the steps of estimating an average distance between said peaks, and using the estimated average distance as an estimate of the pitch. In this way a method less complex than prior art methods, and thus suitable for small digital signal processors, is provided. The method also avoids the pitch halving situation. When the method is based on the fact that the identified peaks in the conformity function show a periodic behaviour and that the true pitch period actually corresponds to the distance between the peaks, a simpler algorithm is achieved which provides the true pitch period independent on the occurrence of pitch halving, pitch doubling, etc. A similar device is also provided. <IMAGE>

IPC 1-7
G10L 11/04

IPC 8 full level
G10L 25/90 (2013.01)

CPC (source: EP)
G10L 25/90 (2013.01)

Citation (search report)
- [Y] EP 0538877 A2 19930428 - MICOM COMMUNICATIONS CORP [US]
- [A] EP 0712116 A2 19960515 - HUGHES AIRCRAFT CO [US]
- [XY] CHILTON E ET AL: "The spectral autocorrelation applied to the linear prediction residual of speech for robust pitch detection", ICASSP 88: 1988 INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (CAT. NO.88CH2561-9),11-14 APRIL 1988, NEW YORK, NY, USA, IEEE, USA, PAGE(S) 358 - 361 VOL.1, XP002146623
- [A] CHILTON E H S ET AL: "PERFORMANCE COMPARISON OF FIVE PITCH DETERMINATION ALGORITHMS ON THE LINEAR PREDICTION RESIDUAL OF SPEECH", EUROPEAN CONFERENCE ON SPEECH TECHNOLOGY,GB,EDINBURGH, CEP CONSULTANTS, vol. CONF. 1, 1 September 1987 (1987-09-01), pages 403 - 406, XP000010751

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
EP 1143413 A1 20011010

DOCDB simple family (application)
EP 00610035 A 20000406