

Title (en)
Voice activity detection.

Title (de)
Detektion für die Anwesenheit eines Sprachsignals.

Title (fr)
Détection de la présence d'un signal de parole.

Publication
EP 0335521 A1 19891004 (EN)

Application
EP 89302422 A 19890310

Priority
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Abstract (en)
Voice activity detector (VAD) for use in an LPC coder in a mobile radio system, uses autocorrelation coefficients R_0, R_1, \dots of the input signal, weighted and combined, to provide a measure M which depends on the power within that part of the spectrum containing no noise, which is thresholded against a variable threshold to provide a speech/no speech logic output. The measure is $\langle \text{MATH} \rangle$ where H_i are the autocorrelation coefficients of the impulse response of an N th order FIR inverse noise filter derived from LPC analysis of previous non-speech signal frames. Threshold adaption and coefficient update are controlled by a second VAD responsive to rate of spectral change between frames.

IPC 1-7
G10L 3/00; G10L 9/08

IPC 8 full level
G10L 25/00 (2013.01); **G10L 25/78** (2013.01)

CPC (source: EP KR)
G10L 25/00 (2013.01 - EP); **G10L 25/78** (2013.01 - EP KR); **G10L 25/84** (2013.01 - KR)

Citation (search report)
• [X] US 4358738 A 19821109 - KAHN LEONARD R
• [A] US 4052568 A 19771004 - JANKOWSKI JOSEPH ALBIN
• [A] EP 0127718 A1 19841212 - IBM [US], et al
• [A] US 4688256 A 19870818 - YASUNAGA SATOSHI [JP]
• [A] GB 2061676 A 19810513 - MARCONI CO LTD
• [A] EP 0178933 A2 19860423 - SHARP KK [JP]
• [X] IEEE TRANSACTIONS ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING, vol. ASSP-25, no. 4, August 1977, pages 338-343, New York, US; L.R. RABINER et al.: "Application of an LPC distance measure to the voiced-unvoiced-silence detection problem"
• [A] ICASSP'81 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING, Atlanta, 30th March - 1st April 1981, vol. 3, pages 1082-1085, IEEE, New York, US; C.K. UN et al.: "Improving LPC analysis of noisy speech by autocorrelation subtraction method"
• [A] 1977 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING, Hartford, Connecticut, 9th-11th May 1977, pages 425-428, IEEE, New York, US; R.J. McAULAY: "Optimum speech classification and its application to adaptive noise cancellation"
• [A] IBM TECHNICAL DISCLOSURE BULLETIN, vol. 22, no. 7, December 1979, pages 2624-2625, New York, US; R.J. JOHNSON et al.: "Speech detector"
• [A] IEEE TRANSACTIONS ON COMMUNICATIONS, vol. COM-26, no. 1, January 1978, pages 140-145, IEEE, New York, US; P.G. DRAGO et al.: "Digital dynamic speech detectors"

Cited by
US6427134B1; EP1703493A3; GB2306010A; US2013054236A1; EP0786760A3; EP0625774A3; US5611019A; EP0714088A1; FR2727236A1; US5732141A; EP0768770A1; FR2739995A1; US5812965A; EP0633658A3; EP0594480A1; FR2697101A1; US5572623A; EP1887559A3; AU670383B2; US5579432A; AU681551B2; AU672934B2; US5579435A; US5632004A; EP0435458A1; GB2317084A; US5774847A; GB2317084B; EP0451796A1; US5293588A; US8775168B2; US8611556B2; WO9801847A1; WO0063887A1; WO9428542A1; WO9634382A1; WO2005048619A1; WO9512879A1; US8275136B2; US6618701B2; US8244528B2; US8682662B2

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