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(54) Speech analysis-synthesis method and apparatus therefor.

(57) An impulse sequence of a pitch frequency is detected from a phase-equalized prediction residual of an input speech signal S(t), and a quasi-periodic impulse sequence is obtained by processing the impulse sequence so that a fluctuation in its pitch frequency is within an allowed limit range. The magnitudes of the quasi-periodic impulse sequence are so determined as to minimize an error between the waveform of a synthesized speech obtainable by exciting an all-pole filter (18) with the quasi-periodic impulse sequence and the waveform of a phase-equalized speech obtainable by applying the input speech signal to a phase equalizing filter (5). Preferably, the quasi-periodic impulse sequence is supplied to the all-pole filter after being applied to a zero filter (10) in which it is given features of the prediction residual of the speech. Coefficients of the zero filter are also determined so that the error of the waveforms of the synthesized speech and the phase-equalized speech is minimum.

FIG. 1A

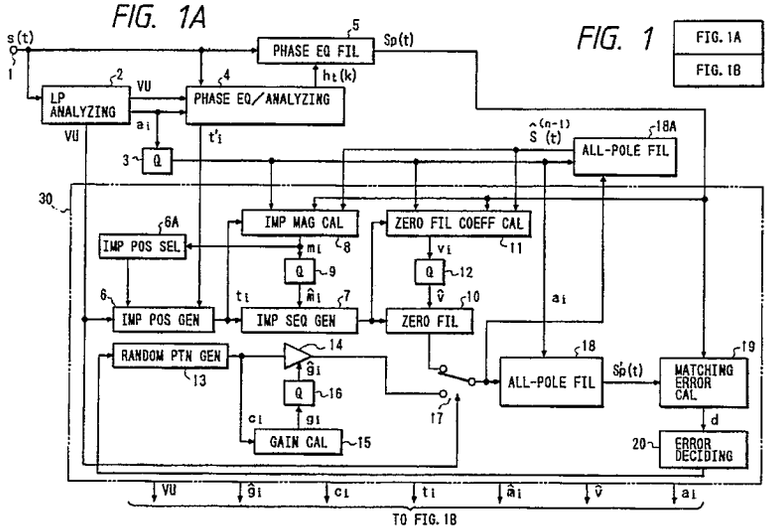

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number

EP 90 11 8888

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,X	US-A-4 850 022 (M. HONDA et al.) * Figure 10 *	1,3,5,7,8, 11	G 10 L 9/14
A	ICASSP'86 - IEEE-IECEJ-ASJ INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING, Tokyo, 7th - 11th April 1986, vol. 3, pages 1701-1704, IEEE, New York, US; T. MORIYA et al.: "Speech coder using phase equalization and vector quantization" * Figure 1; paragraph 2.2: "Phase equalization"; paragraph 2.3: "Pulse pattern quantization" *	1,3,6-8, 11	
P,X	ICASSP'90 - 1990 INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING, Albuquerque, New Mexico, 3rd - 6th April 1990, vol. 1, pages 213-216, IEEE, New York, US; M. HONDA: "Speech coding using waveform matching based on LPC residual phase equalization" * The whole article *	1-12	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

G 10 L 9/14

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	15 October 91	ARMSPACH J.F.A.M.

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
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