



## A NEW PARAMETRIC APPROACH OF APC CODING

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### ABSTRACT

A new method of parametric coding at medium output rate is introduced.

The availability of new electronic components changes the hypotheses assumed in previous studies. A parametric coding scheme with medium output rate is rendered feasible for rule-based synthesis, like for voice-mailing systems.

The weak spot in most of the parametric synthesizers lies in the distinction made between voiced and unvoiced sounds.

Our approach consists in coding, in the frequency domain, the residual signal of a linear prediction analysis. We extract characteristics such as the presence of an harmonic structure, its period, the presence of an underlying or predominant noise, the determination of miscellaneous shape factors...

This parametric, frame based, representation of the residual signal, associated with the linear prediction coefficients, is used for transmission or storage purposes.

The synthesizer first reconstructs the spectrum from these parameters. After a Fast Fourier Transform, this signal drives the signal prediction filter. The use of appropriately-weighted windows smoothes the frame-to-frame transition.

This method does not require any distinction between voiced and unvoiced sounds while providing a more discriminative representation and preserving flexibility of parametric coding systems.

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