Apparatus and Method for Efficient Synthesis of Sinusoids and Sweeps by Employing Spectral Patterns

Abstract

An apparatus for generating an audio output signal based on an encoded audio signal spectrum is provided. The apparatus comprises a processing unit (115) for processing the encoded audio signal spectrum to obtain a decoded audio signal spectrum comprising a plurality of spectral coefficients, wherein each of the spectral coefficients has a spectral location within the encoded audio signal spectrum and a spectral value, wherein the spectral coefficients are sequentially ordered according to their spectral location within the encoded audio signal spectrum so that the spectral coefficients form a sequence of spectral coefficients. Moreover, the apparatus comprises a pseudo coefficients determiner (125) for determining one or more pseudo coefficients of the decoded audio signal spectrum, each of the pseudo coefficients having a spectral value. Furthermore, the apparatus comprises a replacement unit (135) for replacing at least one or more pseudo coefficients by a determined spectral pattern to obtain a modified audio signal spectrum, wherein the determined spectral pattern comprises at least two pattern coefficients, wherein each of the at least two pattern coefficients has a spectral value. Moreover, the apparatus comprises a spectrum-time-conversion unit (145) for converting the modified audio signal spectrum to a time-domain to obtain the audio output signal.

Fig. 1a