EFFICIENT COMBINED HARMONIC TRANSPOSITION

ABSTRACT

The present document relates to audio coding systems which make use of a harmonic transposition method for high frequency reconstruction (HFR), and to digital effect processors, e.g. so-called exciters, where generation of harmonic distortion adds brightness to the processed signal. In particular; a system configured to generate a high frequency component of a signal from a low frequency component of the signal is described. The system may comprise an analysis filter bank (501) configured to provide a set of analysis subband signals from the low frequency component of the signal; wherein the set of analysis subband signals comprises at least two analysis subband signals; wherein the analysis filter bank (501) has a frequency resolution of Δf. The system further comprises a nonlinear processing unit (502) configured to determine a set of synthesis subband signals from the set of analysis subband signals using a transposition order P; wherein the set of synthesis subband signals comprises a portion of the set of analysis subband signals phase shifted by an amount derived from the transposition order P; and a synthesis filter bank (504) configured to generate the high frequency component of the signal from the set of synthesis subband signals; wherein the synthesis filter bank (504) has a frequency resolution of $F\Delta f$; with F being a resolution factor, with $F \geq 1$; wherein the transposition order P is different from the resolution factor F.

Fig. 5