Claims

1. Audio encoder comprising

a spectral decomposer ~~(10)~~ for spectrally decomposing, using an MDCT, an audio input signal ~~(12)~~ into a spectrogram ~~(14)~~ of a sequence of spectrums;

an autocorrelation computer ~~(50)~~ configured to compute an autocorrelation from a current spectrum of the sequence of spectrums;

a linear prediction coefficient computer ~~(52)~~ configured to compute linear prediction coefficients based on the autocorrelation;

a spectral domain shaper ~~(22)~~ configured to spectrally shape the current spectrum based on the linear prediction coefficients; and

a quantization stage ~~(24)~~ configured to quantize the spectrally shaped spectrum;

wherein the audio encoder is configured to insert information on the quantized spectrally shaped spectrum and information on the linear prediction coefficients into a data stream,

wherein the autocorrelation computer is configured to, in computing the autocorrelation from the current spectrum, compute the power spectrum from the current spectrum, and subject the power spectrum to an inverse ODFT transform.

2. The audio encoder of claim 1, further comprising

a spectrum predictor ~~(26)~~ configured to predictively filter the current spectrum along a spectral dimension, wherein the spectral domain shaper is configured to spectrally shape the predictively filtered current spectrum, and the audio encoder is configured to insert information on how to reverse the predictive filtering into the data stream.

3. Audio encoder according to claim 2, wherein the spectrum predictor is configured to perform linear prediction filtering on the current spectrum along the spectral dimension, wherein the data stream former is configured such that the information

on how to reverse the predictive filtering comprises information on further linear prediction coefficients underlying the linear prediction filtering on the current spectrum along the spectral dimension.

4. Audio encoder according to claim 2 or 3, wherein the audio encoder is configured to decide to enable or disable the spectrum predictor depending on a tonality or transiency of the audio input signal or a filter prediction gain, wherein the audio encoder is configured to insert information on the decision.

5. Audio encoder according to any of claims 2 to 4, wherein the autocorrelation computer is configured to compute the autocorrelation from the predictively filtered current spectrum.

6. Audio encoder according to any of claims 2 to 5, wherein

the spectral decomposer ~~(10)~~ is configured to switch between different transform lengths in spectrally decomposing the audio input signal ~~(12)~~ so that the spectrums are of different spectral resolution, wherein the autocorrelation computer ~~(50)~~ is configured to compute the autocorrelation from the predictively filtered current spectrum in case of a spectral resolution of the current spectrum fulfilling a predetermined criterion, or from the not predictively filtered current spectrum in case of the spectral resolution of the current spectrum not fulfilling the predetermined criterion.

7. Audio encoder according to claim 6, wherein the autocorrelation computer is configured such that the predetermined criterion is fulfilled if the spectral resolution of the current spectrum is higher than a spectral resolution threshold.

8. Audio encoder according to any of claims 1 to 7, wherein the autocorrelation computer is configured to, in computing the autocorrelation from the current spectrum, perceptually weight the power spectrum and subject the power spectrum to the inverse ODFT transform as perceptually weighted.

9. Audio encoder according to claim 8, wherein the autocorrelation computer is configured to change a frequency scale of the current spectrum and to perform the perceptual weighting of the power spectrum in the changed frequency scale.

10. Audio encoder according to any of claims 1 to 9, wherein the audio encoder is configured to insert the information on the linear prediction coefficients into the data stream in a quantized form, wherein the spectral domain shaper is configured to spectrally shape the current spectrum based on the quantized linear prediction coefficients.

11. Audio encoder according to claim 10, wherein the audio encoder is configured to insert the information on the linear prediction coefficients into the data stream in a form according to which quantization of the linear prediction coefficients takes place in the LSF or LSP domain.

12. Audio encoding method comprising

spectrally decomposing, using an MDCT, an audio input signal ~~(12)~~ into a spectrogram ~~(14)~~ of a sequence of spectrums;

computing an autocorrelation from a current spectrum of the sequence of spectrums;

computing linear prediction coefficients based on the autocorrelation;

spectrally shaping the current spectrum based on the linear prediction coefficients;

quantizing the spectrally shaped spectrum; and

inserting information on the quantized spectrally shaped spectrum and information on the linear prediction coefficients into a data stream,

wherein the computation of the autocorrelation from the current spectrum, comprises computing the power spectrum from the current spectrum, and subjecting the power spectrum to an inverse ODFT transform.

13. Computer program having a program code for performing, when running on a computer, a method according to claim 12.