Title (en)

AUDIO SIGNAL PROCESSING METHOD AND DEVICE

Title (de)

VERFAHREN UND VORRICHTUNG ZUR VERARBEITUNG VON TONSIGNALEN

Title (fr)

PROCÉDÉ ET DISPOSITIF DE TRAITEMENT DE SIGNAL AUDIO

Publication

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Application

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Abstract (en)

[origin: CN113424557A] The present invention relates to a method and device/apparatus for an audio signal processing in an audio chain, the method and apparatus that correct a non-linearity of electroacoustic transducers in the audio chain taking into consideration also a non-linear psychoacoustical characteristics of the human ear by adding non-linearities in the audio chain in a controlled manner, in order to obtain a better acoustic image and more details when reproducing a sound by using approximation of the quadratic and a fifth degree polynomial function in some range. According to the present invention, the method comprises approximating by a non-linear fifth degree polynomial function of the psychoacoustical characteristics of the human ear and adding of at least one non-linear element (4) in front of at least one electroacoustic transducer in the audio chain, whereby the non-linear element (4) has a function to add a non-linearity in the audio chain that corrects the non-linearity of at least one electroacoustic transducer and/or the non-linearity of the approximated psychoacoustical characteristic of the human ear for a pressure change by the human ear up to rho delta. An audio signal processing apparatus (19) of the present invention comprises at least one non-linear element (4) in an audio chain that has the function of adding non-linearity to an audio chain that corrects the non linearity of at least one electroacoustic transducer and/or the non-linearity of the approximate psychoacoustical characteristic of the human ear for the pressure change by the human ear to rho delta. The present method and the apparatus (19) reduce limitations of the electroacoustic transducers as well as the human ear by adding non-linearities that, ultimately reduce non-linearities of the entire audio chain with the human ear, i.e. adding non-linearities in the audio chain so that an audio chain characteristic reduces the non-linearity of the human ear polynomial approximation to the pressure change rho delta = +/-1 Pa.

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