Title (en)
METHOD FOR CONVERSION, STEREOPHONIC ENCODING, DECODING AND TRANSCODING OF A THREE-DIMENSIONAL AUDIO SIGNAL

Title (de)
VERFAHREN ZUR UMWANDLUNG, STEREOPHONEN CODIERUNG, DECODIERUNG UND TRANSCODIERUNG EINES DREIDIMENSIONALEN AUDIOSIGNALS

Title (fr)
PROCEDE DE CONVERSION, D'ENCODAGE STEREOPHONIQUE, DE DECODAGE ET DE TRANSCODAGE D'UN SIGNAL AUDIO TRIDIMENSIONNEL

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Abstract (en)
[origin: WO2018059742A1] The invention relates to a method for the conversion, encoding, decoding and transcoding of a sound field, especially a first-order Ambisonics three-dimensional sound field, including at least one method of converting said sound field into a spherical field, a method of encoding said spherical field into a stereophonic signal, a method of decoding a stereophonic signal to a spherical field, or a method of transcoding said spherical field to a randomly chosen audio format. According to the method of encoding the Ambisonics sound field into a spherical field, said sound field is separated, in the frequency domain, into three components, or optionally two components, and these components are recombined into a total spherical field. According to the method of encoding the spherical field into a stereophonic signal, in the frequency domain, the panning values and phase-difference values are determined, the singularity of the phase difference in the interchannel domain is determined, the phase correspondence function in the interchannel domain is determined, and the left-hand and right-hand components of the signal encoded into stereophonic form are calculated. The spherical coordinates are optionally subjected to affine modification such that they correspond to the standard geometric disposition of the left-hand and right-hand channels. The method of decoding into a spherical field is applied to any stereophonic signal, in particular a stereophonic signal obtained by the above encoding method. According to the aforementioned method of decoding into a spherical field, in the frequency domain, the panning and phase difference are determined, the new position of the phase difference singularity in the interchannel domain is determined, said position varying temporally, the phase correspondence function in the interchannel domain is determined, a complex coefficient corresponding to the desired spherical field is determined, and the direction of provenance in the spherical field is determined, said direction being optionally subject to affine modification in order to correspond to the standard geometric disposition of the left-hand and right-hand channels. The method of transcoding on the basis of a stereophonic signal comprises the above method of decoding to a spherical field, followed by a method ensuring that the spherical field is projected on a specified audio panning law or a binauralisation method.

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Cited by
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