Title (en)

SECOND-ORDER GRADIENT LOUDSPEAKER SYSTEM, AS WELL AS SECOND-ORDER GRADIENT LINE ARRAY SPEAKER AND PLANE WAVE SPEAKER CONSTRUCTED FROM SUCH LOUDSPEAKER SYSTEMS

Title (de)

GRADIENTENLAUTSPRECHERSYSTEM ZWEITER ORDNUNG, SOWIE AUS SOLCHEN LAUTSPRECHERSYSTEMEN KONSTRUIERTE GRADIENTENLINEARLAUTSPRECHER UND FLACHWELLENLAUTSPRECHER ZWEITER ORDNUNG

Title (fr)

SYSTÈME DE HAUT-PARLEUR À GRADIENT DE SECOND ORDRE, AINSI QUE HAUT-PARLEUR À RÉSEAU DE LIGNES DE GRADIENT DE SECOND ORDRE ET HAUT-PARLEUR À ONDES PLANES CONSTRUIT À PARTIR DE TELS SYSTÈMES DE HAUT-PARLEUR

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2021176240A2] The present invention relates to a second-order gradient loudspeaker system comprising two first-order gradient loudspeaker systems (1, 2) with loudspeaker (LS1, LS2) arranged at a distance d from one another, said two first-order gradient loudspeaker systems (1, 2) are located substantially one behind the other and a cavity of width h is present therebetween, the cavity has a volume with an acoustic capacity CK. The first-order gradient loudspeaker systems (1, 2) according to the invention are of passive design, that is, each of said systems (1, 2) is formed as an acoustic network consisting of passive acoustic elements having at least one of a passive acoustic mass (M), acoustic resistance (R) and acoustic capacity (C). Said acoustic network comprises at least one phase rotating member capable of passive gradient generation, wherein said first-order gradient loudspeaker systems (1, 2) are driven by modified audio frequency electrical signals directly or through at least one element selected from the group consisting of all-pass filters (APF), low-pass filters (LPF) and delay circuits (τ) in such a way that the rear first-order gradient loudspeaker system (2) is in reversed phase compared to the front first-order gradient loudspeaker (1), and the driving electrical signal of the rear system (2) is delayed by a total delay time τ compared to the driving electrical signal of the front system (1), the total delay time τ is given by Formula (I) wherein c is the sound propagation velocity in air at a given temperature; and α is a factor that defines the required type of the polar pattern of the second-order gradient loudspeaker system within a range extending from cardioid to „8"-shaped, or bidirectional.

IPC 8 full level

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