Title (en)

Multi-microphone method for estimation of target and noise spectral variances

Title (de)

Multi-Mikrofonverfahren zur Schätzung von Ziel- und Rauschspektralvarianzen

Title (fr)

Procédé à plusieurs microphones pour l'estimation de variances spectrales d'une cible et du bruit

Publication

EP 2916320 A1 20150909 (EN)

Application

EP 14158321 A 20140307

Priority

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Abstract (en)

The application relates to a method of processing a noisy (e.g. reverberant) signal comprising a noise signal component and a target signal component, the method comprising a) Providing or receiving a time-frequency representation Yi(k,m) of a noisy signal yi(n) at an ith input unit, i=1, 2, ..., M, where M is larger than or equal to two, in a number of frequency bands and a number of time instances, k being a frequency band index and m being a time index; b) Providing characteristics of said target signal component and said noise signal component; and c) Estimating spectral variances or scaled versions thereof » V , » X of said noise signal component v and said target signal component x, respectively, as a function of frequency index k and time index m, said estimates of » V and » X being jointly optimal in maximum likelihood sense, based on the statistical assumptions that a) the time-frequency representations Y i (km), X i (k,m), and V i (k,m) of respective signals y i (n), and signal components x i (n), and v i (n) are zero-mean, complex-valued Gaussian distributed, b) that each of them are statistically independent across time m and frequency k, and c) that X i (k,m) and V i (k,m) are uncorrelated. The application further relates to an audio processing system and to the use of such audio processing device. An object of the present application is to provide a scheme for estimating the signal power as a function of time and frequency of a noise (e.g. reverberant) part of a noisy speech signal. An advantage of the invention is that it provides the basis for an improved intelligibility of an input speech signal. The invention may e.g. be used for hearing assistance devices, e.g. hearing aids, headsets, ear phones, active ear protection systems, handsfree telephone systems, mobile telephones.

IPC 8 full level

G10L 21/0208 (2013.01); G10L 21/0216 (2013.01); G10L 21/0232 (2013.01)

CPC (source: EP)

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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

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