

Title (en)
Methods and apparatus for spectral analysis.

Title (de)
Verfahren und Einrichtung zur spektralen Analyse.

Title (fr)
Procédé et dispositif pour l'analyse spectrale.

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EP 91301034 A 19910208

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Abstract (en)
In automatic speech recognition it is usual to make a spectral analysis of the incoming speech signal and it can be useful to detect the frequencies and intensities of the formants. However although the formants are mostly quite well defined during vowel sounds there are frequent occasions when this is not so and it is not so during a high proportion of consonant sounds. The present invention determines the frequencies at which the centroids of respective frequency versus power distributions occur in a plurality of frequency bands of a signal representing speech (approximately corresponding to the ranges of individual formants). The centroids have most of the desirable properties of formants but also carry significant information for those sounds for which the conventional definition of formants does not seem appropriate. Preferably the powers in the bands in which the centroids are measured are also determined. The incoming signal is filtered (2) into separate frequency bands and the power in each band is measured (4). The output signal in each band is weighted by 3 dB per octave (5) and then the power in that band is measured (6). The power ratio obtained (7) for a band from the power after 3 dB weighting divided by the power before weighting gives an indication of the position of the centroid of that band in the frequency spectrum. <IMAGE>

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