SOME PSYCHOPHYSICAL PERFORMANCES OF THE AUDITORY SYSTEM ANALIZED BY MEANS OF MATHEMATICAL MODELLING TECHNIQUES

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Available experimental investigations of the anatomo-physiological properties of peripheral auditory system explain the question if and to what extent the results of psyco-acoustic experiences can be justified by peripheral stimuls coding.

The problem of relating the activity on the whole set of eighth nerve fibers to psychophysical measurement appears of great interest in giving a unitary vision to the matter. The only profitable starting point to face the question seemed to be the mathematical modelling approach, in view of the possibilities it offers in order to yield a detailed description of the related topics.

Models based on the concept of equivalent fiber are adopted here, which are thought to be particularly useful in analyzing salient aspects of some psychoacoustic experiments (absolute threshold, masking and stimulus parameters discrimination).

Preliminary results obtained with the aid of digital computer simulations are presented and conclusions are drown on that basis.