

Biosignals from a biophysics perspective/signal distortion during transmission

Signal distortion during transmission

As we showed at the end of the paragraph on the calibration signal, in a real situation, during the passage of the signal through the system, changes usually occur such that the dependence of the output signal $y(t)$ on the input signal $x(t)$ is more complex than can be expressed by the simple linear relation (1), or by the relation

$$y(t) = A \cdot x(t) + C \quad (30)$$

which differs from relation (1) only by the additive constant C , representing the shift of the output signal from the zero position (**shift**).

In the case of more complex dependencies than relations (1) or (30), we speak of **distortion** of the signal during transmission.

A distorting amplifier or loudspeaker can cause us a lot of inconvenience, but there are also cases where such distortion can be beneficial. Since the output signal is somehow indicative of the path it must have taken, we will be interested in how we can get some information out of it, i.e. how to use the passing signal to diagnose a system such as the neural pathway in the human brain. Therefore, we will stop for a moment with the concept of system.

Reference

Source

- HEŘMAN, Petr. *Biosignály z pohledu biofyziky*. 1. edition. Praha : Petr Heřman – DÚLOS, 2006. 64 pp.

Recommended literature

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