# Digital biosignal processing with R

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## Abstract

Though R gained high popularity in recent years in areas of data science and bioinformatics, the application of R programming for digital signal processing is not widespread to large extent. "Signal" is the most popular CRAN package for signal processing in R. This package contains functions for filtering, resampling, interpolation and other routines based on traditional Matlab and GNU Octave functionality.

Besides "signal", other useful basic signal processing packages (*e.g.*, "wavelets") and specialized packages for digital biosignal processing (*e.g.*, heart rate variability analysis – "RHRV" package, processing of event-related brain potentials – "erpR", analysis and evaluation of electroencephalography data – "eegkit", routines for processing and modeling of electromyography signals – "biosignalEMG") provide solid foundation for R application in digital biosignal processing.

In this talk, besides brief overview of R for biosignal processing, we will demonstrate some useful signal processing techniques implemented in R aiming at artifact cancellation in biosignals.

**Keywords**: R programming; DSP; biosignal analysis; artifact removal.