MFA Toolbox for multifractal analysis and visualization of the brain activity

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MFA Toolbox for Matlab or GNU Octave is developed by the author a set of functions designed for nonlinear multifractal auto- and crosscorrelation time-series analysis of nonstationary, multifractal, multichannel (multidimentional) data with comprehensive, completely automated processing of complex datasets and for the study of the dynamics of the multifractal parameters by implementing of various advanced methods of the theory of chaos, the nonlinear dynamics and the multifractals. It is optimized for maximum performance through a highly optimized performance via parallelizated algorithms utilizing multicore processors and the simultaneous processing of multidimensional data structures. The functions are modular and through unified interface they are easily expandable with a new and possibly even completely different methods. There are realized various methods for synthesis of series with a given correlation and multifractality as well as additional functions for preprocessing, such as different types of filtering and extracting if necessary. Specialized functions for visualization of the brain activity registered by the EEG are implemented. It is ready for production/clinical use.

References

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