Announcement

Seminar on Deformation Quantization

1. 7. 2022 at 2pm CEST

Seminar in SE 31

Martina Flammer (JMU Würzburg)

Persistent Homology Based Classification of Chaotic Multi-Variate Time Series with Application to EEG Data

An application of persistent homology for detection of epileptic events in EEG data is presented. Given point cloud data, persistent homology is a tool from topological data analysis to describe the structure of the underlying space on which the data was sampled by utilizing topological invariants and tracking their behavior on several spatial scales. As a preprocessing step, a novel method called Dynamical Component Analysis is used that reduces the dimension of a multi-variate time series by incorporating information about the dynamics of the system. The results show that our proposed method is appropriate to detect the occurence of petit-mal epileptic seizures in EEG signals.

Invited by Stefan Waldmann