Functional Data Analysis in Statistical Processing of Cyclostationary Signals. Theory and Applications.

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Cyclostationary signals are now observed with very high frequency. In many applications, we have huge data sets generated only by few minutes of observations of signals with at least 2 kHz frequencies. This creates a need for new models that are able to deal with massive data sets and, at the same time, are able to provide a meaningful insight into the phenomena under study. Such approach is provided by the functional data analysis – a contemporary part of statistical inference where the most elementary observation is a curve, that might be observed with an arbitrary frequency. In the talk, I will present a functional periodic autoregressive model and present its usefulness in applications.