Resampling techniques for cyclostationary time series.
Long memory, weak dependence and heavy tails perspective.

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The main goal of the presentation is to review the recent results regarding resampling techniques for nonstationary time series and stochastic processes that are nonstationary. The type of nonstationarity under study is focused on periodic and almost periodic behavior of first and second moment characteristics of time series or stochastic processes. Such models are widely applied in the processing of telecommunication signals, diagnostics of mechanical components, climatology, finance and many others and are frequently called *cyclostationary processes*. Our focus will be on such time series that also have long memory but fulfill the weak dependence condition. For some cases, we will also show how heavy tailed weakly dependent cyclostationary time series can be dealt with.

The estimation of the mean and covariances functions for such time series encounters the usual problems with the asymptotic distribution of the estimator. Although the central limit theorem holds, however, the parameters of the asymptotic distributions are very difficult to estimate. Therefore, the various resampling routines are proposed. Theorems regarding consistency of those routines will be shown together with the applications.

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