

# Tool for analysis of time series of NMR data

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## Matlab scripts

1. [All scripts and functions.](#)
2. [Script demo.](#)

### 1. List of scripts and functions that are used inside each of them.

[dyn\\_pr\\_split](#) - determination of change points.

[compute\\_nb\\_cp](#) - computes number of change points in time series data.  
→ [dyn\\_pr\\_split](#) - determination of change points.

[gen\\_rand](#) - generates random time series, distorted by white noise, which is based on randomly generated change points.

[gen\\_ar](#) - Computes confidence statistics of correct assignment of change points basing on generated ar models. Additionally it illustrates results basing on few plots.  
→ [compute\\_ar](#) - generates ar model with given noise in interval of time series either for constant parameters or generated by Matlab functions.  
→ [gen\\_rect](#) - computes coordinates of rectangle which illustrates change in interval of given time series. Coordinates are based on mean and standard deviation of given interval.  
→ [dyn\\_pr\\_split](#) - determination of change points.

[comp\\_two](#) - compares two sets of time series with given number of change points and presents results on plot.  
→ [gen\\_ar](#) - Computes confidence statistics of correct assignment of change points basing on generated ar models. Additionally it illustrates results basing on few plots.

[check\\_change\\_points](#) - generates different data and checks reproducibility of change points.  
→ [gen\\_rand](#) - generates random time series, distorted by white noise, which is based on randomly generated change points.  
→ [gen\\_ar](#) - Computes confidence statistics of correct assignment of change points basing on generated ar models. Additionally it illustrates results basing on few plots.

**2. Script [demo](#) demonstrates possible usage of software detecting changes in time series according to one of possible choice value:**

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1. Generate random data and compute confidence statistics.
2. Compare results of change point analysis for two different time series.
3. Generate different data and check reproducibility of change points.

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