Coefficient of Radomness user guide

A statistical test to express changes in seismicity patterns by means of an objective criterion. The Matsumura Test provides the parameter of Matsumura, value of the parameter in 5% and 95% percentile and the patterns classification as regular, completely random, and clustered.

open in IS-EPOS PLATFORM

REFERENCES Document Repository

CATEGORY Collective Properties of Seismicity

KEYWORDS Statistical analysis, Statistical properties of seismicity

CITATION Please acknowledge use of this application in your work: IS-EPOS. (2017). *Coefficient of Randomness* [Web application]. Retrieved from https://tcs.ah-epos.eu/

Step by Step

In order to use the **Coefficient of Radomness** application the user must upload a time series data available in the workspace. This is the mandatory input to the application. The time series data can be easily created with other tools available on the EPISODES Platform, as described below.

The workflow for **Coefficient of Radomness** application:

1. Choose a catalog (or extract part of the catalog with **Catalog Filter**) from a selected episode.
2. Add to user workspace the **Catalog to Vector converter** application. It allows to extract vectors of time and time–correlated attributes of user's choice from the seismic catalog.
   Select the seismic catalog to be used and choose the parameter to be analyze (e.g. Mw).

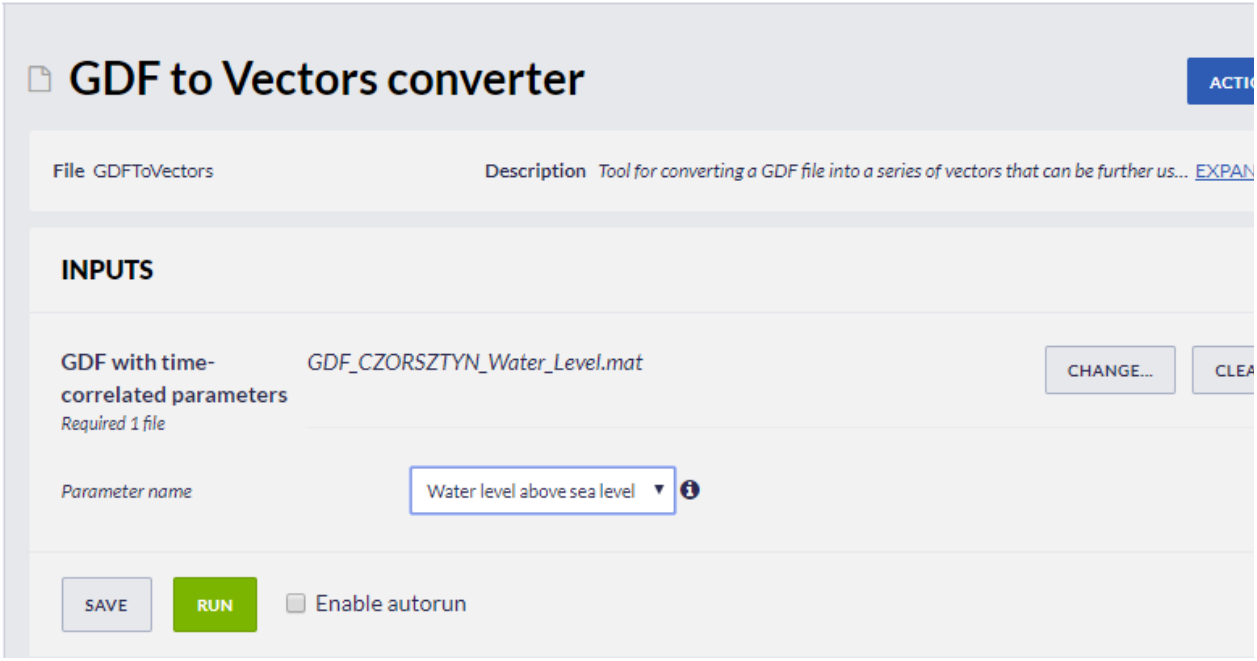

Figure 1. Input of GDF to Vectors converter application.

The application generates two files: time_vector.mat and time_correlated_param_vector.mat. These are input files to the Time Series Builder application that user should use next.

2. Add the **Time Series Builder** to the workspace. This application allows the user to generate data series based on time vector and time-correlated parameter vector files created in the previous step. Please check detail in the Chapter Time Series Builder user guide.

As a result Time_series.mat appers.

3. Add **Coefficient of Radomness** application to the workspace. The mandatory input is the time series file generated in the previous step.

Press the RUN button to initiate the process.

4. As a result of the application are:

- Matsumura coefficient

- 95% boundary of Matsumura coefficient
- Probability Type of seismicity pattern - cluster pattern for Matsamura coefficient < 0.5, random pattern for Matsamura coefficient = 0.5 and Cyclic/Regular pattern for Matsamura coefficient > 0.5

Back to top

Related Documents

Go to EPISODES PLATFORM

- Anderson-Darling test for exponentiality of inter-event time user guide
- Autocorrelation user guide
- Coefficient of Radomness user guide
- Completeness Magnitude Estimation user guide
- Cross Correlation user guide
- Magnitude Conversion user guide
- Priestley-Subba Rao (PSR) test user guide
- Stress and strain changes induced by fluid injection and temperature change driven by geothermal injection user guide
- Time correlated earthquakes (Seasonal trends) user guide