# ExAnTo- Extreme Value Analysis Tool

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**Filename:** ExAnTo.jar
**Programming language:** Java
**Version:** 1.14 (13.07.2010)
**Theme:** Extreme Value Analysis

**Short Description**
The program ExAnTo is intented for the statistical analysis of samples (e.g. annual flood peaks) using statistical distribtutions.
The following distributions are available in ExAnTo:

- Gumbel-Distribution
- Generalized Extreme Value Distribution GEV
- Weibull-Distribution
- Log-Weibull-Distribution
- Exponential-Distribution
- Pearson III-Distribution
- Log-Pearson III-Distribution
- Gamma-Distribution
- Normal-Distribution
- Log-Normal-Distribution
- 3-parametric Log-Normal-Distribution
- Frechet-Distribution
- 2-parametric Generalized Pareto Distribution
- 3-parametrische Generalized Pareto Distribution

The parameters of the distributions can be estimated using the method of moments, L-moments or the maximum likelihood method. The quantiles of the distribution are calculated for selected return periods. Goodness-of-fit measures and confidence intervals are calculated with ExAnTo.
To run the program a control file is required.

**Usage** (DOS-command prompt in the folder with the program):
java -jar ExAnTo.jar controlFile

Example: *java -jar ExAnTo.jar control.txt*

**If the control file is located in the same folder as the program file exanto.jar and named "control.txt", then EXANTO can be executed in windows by double-clicking the file ExAnTo.jar.**

**Example: Sample Input File:**
„***Sample.csv***" (in the example 2 samples are analyzed), saved in the folder "data".
Please note:

- The sample names are in the first row
- The file delimiter is semicolon ";"
- The decimal separator is point "."

Part of the example file " ***Sample.csv*** ":

*Sample1;Sample2*
*23.6;4.25*
*6.9;5.14*
*16.6;4.69*
*17.2;3.43*
*5.86;8.86*

**Result files:**

- For every sample a new folder with the sample name is created by ExAnTo
- For every selected distribution a new result file is created in the folder of the sample by ExAnTo
  Name: *Sample_name + abbreviation_Distribution + Parameter_Estimation_Method, e.g. Sample1_GP3 ML.csv*
- For every sample in the result folder a statistics file with the summary of all selected distributions is created

**Sample-Control File:**
***„control_E.txt“***
Required:

- the path of the Sample-File e.g. ***D:\Exanto\Data\sample.csv***
- the desired analysis
- the result folder, e.g.: ***D:\Exanto\results***

**Special note:**
Java Virtual Machine is required to run ExAnTo:
Freely available on the internet:
http://www.oracle.com/technetwork/java/javase/downloads/index.html
(Download and install Java Runtime Environment (JRE) 6)

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To maintain ExAnTo, please report bugs to the developer Bastian Klein Bastian.Klein@rub.de (please add sample data).