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ESTIMATION OF EXTREME VALUES USING PYTHON AND SCIKIT-EXTREMES

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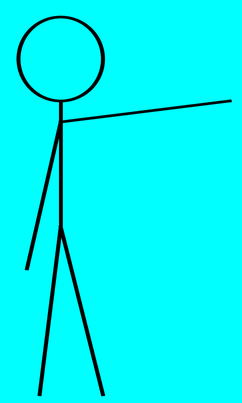
HTTPS://PYBONACCI.ORG

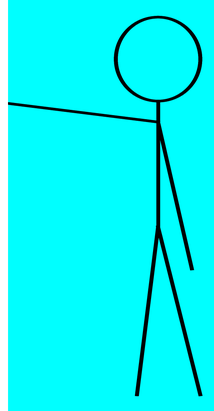


WHAT IS SCIKIT-EXTREMES:

* IT IS A TINY LIBRARY TO PERFORM UNIVARIATE EXTREME VALUE CALCULATIONS.
* ITS MAIN GOAL IS TO FILL A GAP IN THE PYDATA ECOSYSTEM TO PERFORM THIS TYPE OF ESTIMATIONS.
* EXTREME VALUE THEORY (EVT) IS UNIQUE AS A STATISTICAL DISCIPLINE.
* IT DEVELOPS TECHNIQUES AND MODELS FOR DESCRIBING THE UNUSUAL RATHER THAN THE USUAL.
* IT IS FOCUSED IN THE TAIL OF THE DISTRIBUTION.
* MAIN FIELDS OF INTEREST: HYDROLOGY, METEOROLOGY, OCEAN, ENGINEERING,...

FEATURES:

* BASED ON THE WELL TESTED PYDATA STACK.
* DATASETS INCLUDED TO EASILY TEST AND/OR TEACH ABOUT THE TOPIC.
* PLOTTING CAPABILITIES.
* FIT BASED ON SEVERAL TECHNIQUES (MLE, MOM, L-MOMENTS,...).
* INCLUDES SIMPLE MODELS USED IN THE ENGINEERING INDUSTRY.
* METHODS TO QUANTIFY THE QUALITY OF THE FIT (CONFIDENCE INTERVALS, PROBABILITY PLOTS,...).
* SCIENTIFIC METHODS USED ARE REFERENCED AND TESTED.
* INCLUDES DOCUMENTATION.



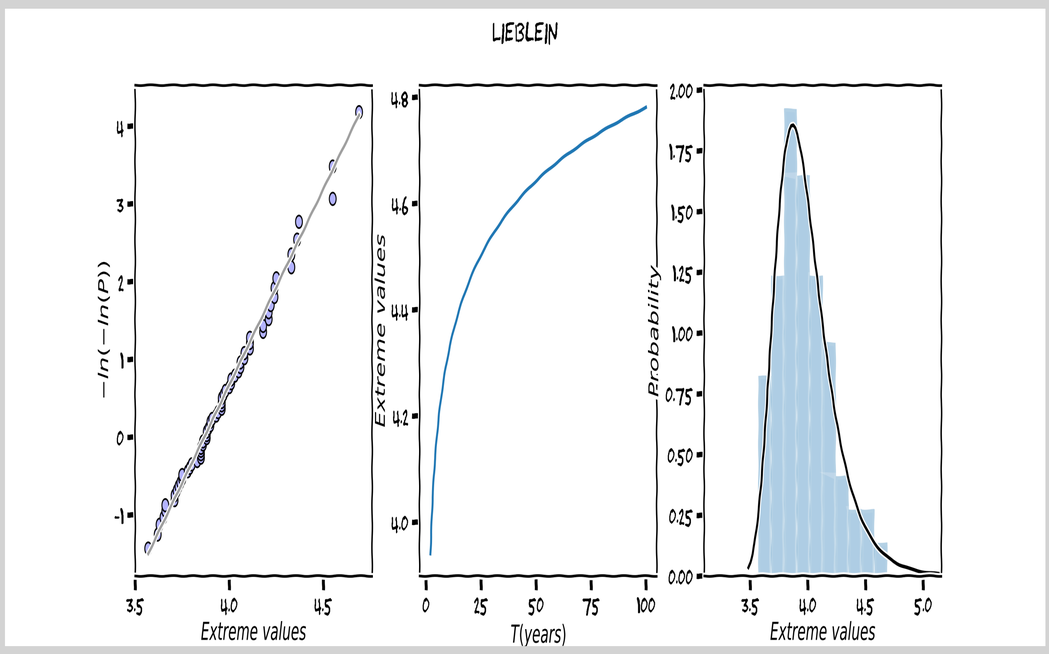
EXAMPLE 1:
FIT EXTREME WAVE HEIGHT USING LIEBLEIN METHOD

```
import skextremes as ske
import matplotlib.pyplot as plt

data = ske.datasets.portpirie()
data_array = data.asarray()
sea_levels = data.fields.sea_level

model = ske.models.engineering.Lieblein(sea_levels)

fig, *_ = model.plot_summary()
fig.show()
```



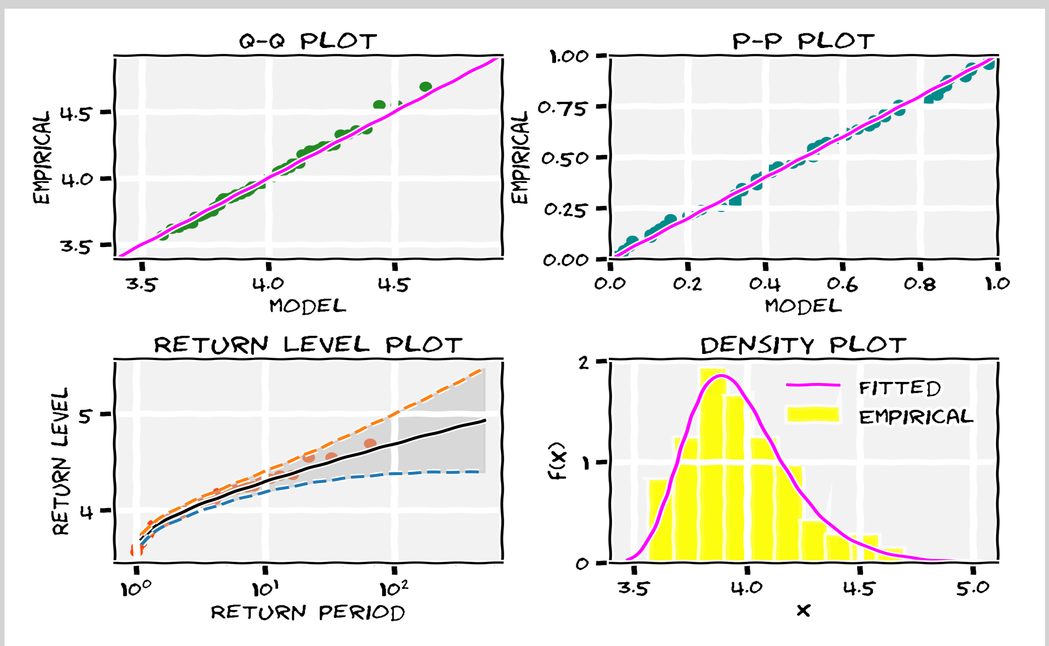
EXAMPLE 2:
FIT EXTREME WAVE HEIGHT USING GEV METHOD

```
import skextremes as ske
import matplotlib.pyplot as plt

data = ske.datasets.portpirie()
data_array = data.asarray()
sea_levels = data.fields.sea_level

model = ske.models.classic.GEV(sea_levels, fit_method = 'mle', ci = 0.05,
                               ci_method = 'delta')

fig, *_ = model.plot_summary()
fig.show()
```



MORE INFORMATION:

* USER GUIDE: HTTPS://SCIKIT-EXTREMES.READTHEDOCS.IO/EN/LATEST/USER%20GUIDE.HTML
* RTFD: HTTPS://SCIKIT-EXTREMES.READTHEDOCS.IO/EN/LATEST/INDEX.HTML
* REPOSITORY: HTTPS://GITHUB.COM/KIKOCORREOSO/SCIKIT-EXTREMES
* TWITTER: HTTPS://TWITTER.COM/PYBONACCI