

# QWTB - Software Toolbox for Sampling Measurements

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- **Do you search for an algorithm?**
- **Do you NOT want to learn how to use it?**
- **Do you need to apply more algorithms to one set of data?**
- **Do you need to randomize inputs?**
- **Do you want examples for algorithms?**

**You want QWTB!**

## WHY DO YOU NEED QWTB?

**QWTB can help with:**

- searching of useful algorithms,
- learning how to use algorithms,
- application of multiple algorithms to a user data.

**QWTB has:**

- standardized format of input and output quantities independent on the applied algorithm,
- standardized use of algorithms,
- examples for every implemented algorithm,
- full documentation with examples,
- integration into LabVIEW,
- graphical user interface,
- ability to variate inputs and calculate uncertainties by means of Monte Carlo Method.
- tests for every implemented algorithm.

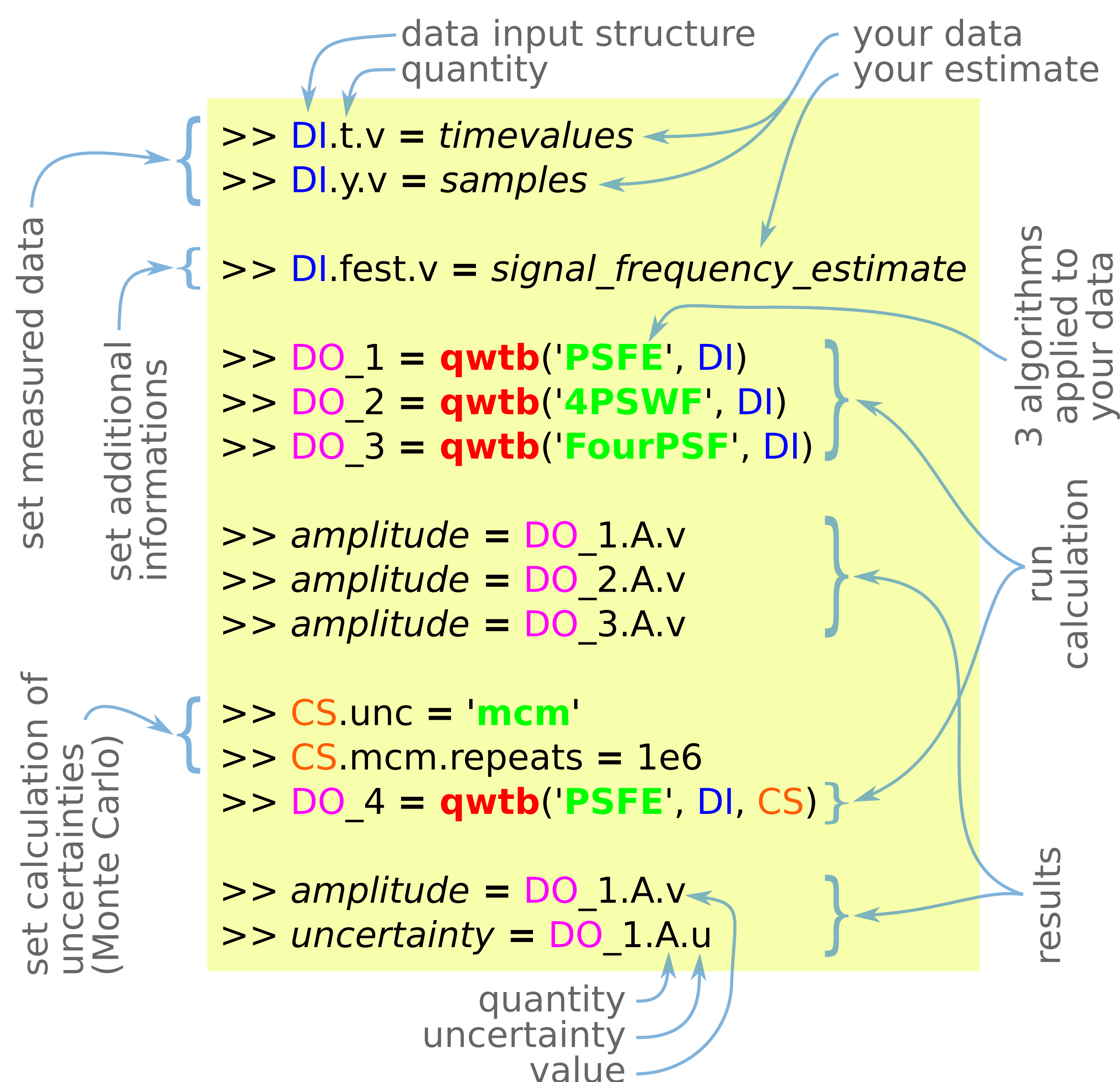
## LICENSE



QWTB is opensource, MIT License. Algorithms have **different** licenses.



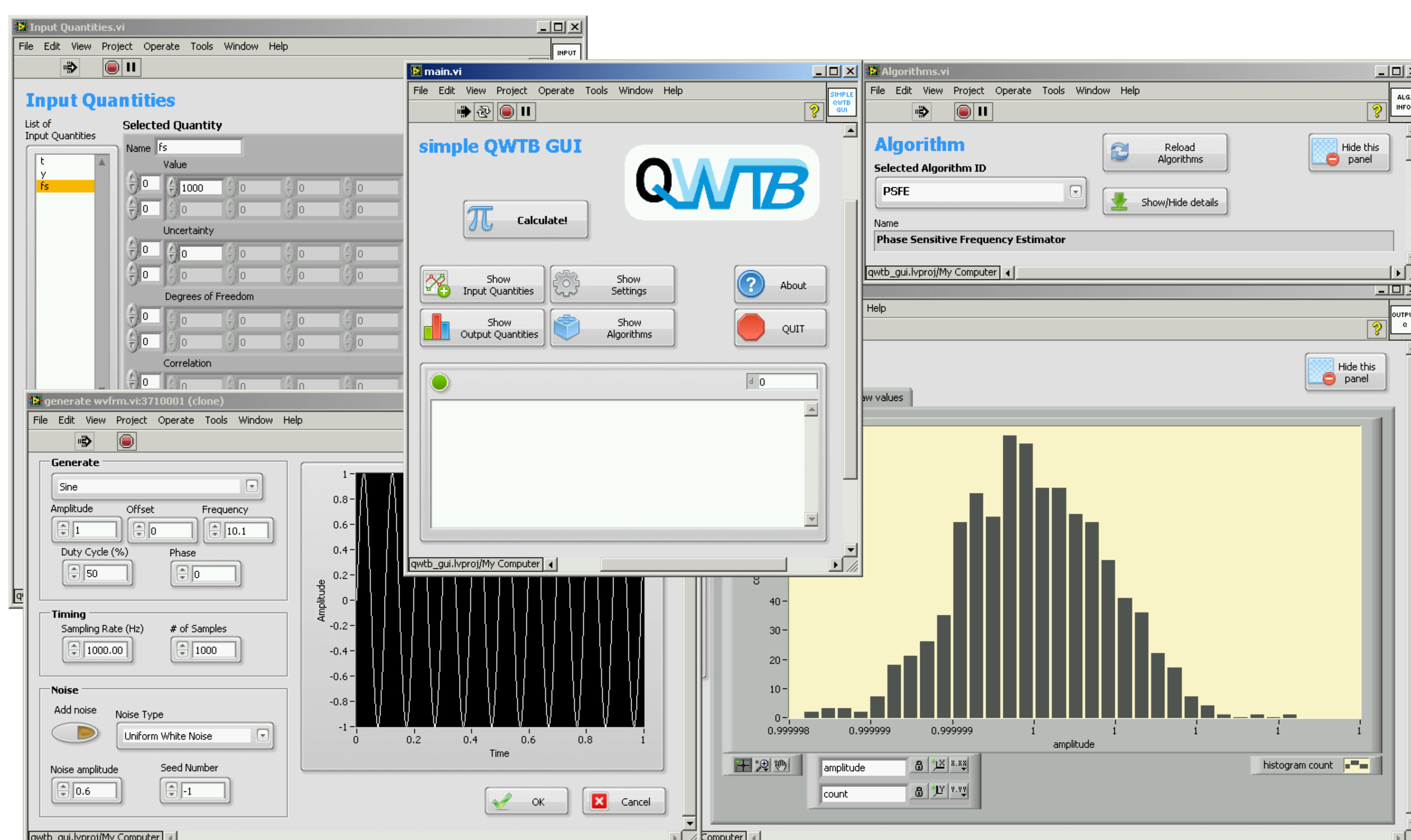
## EXAMPLE



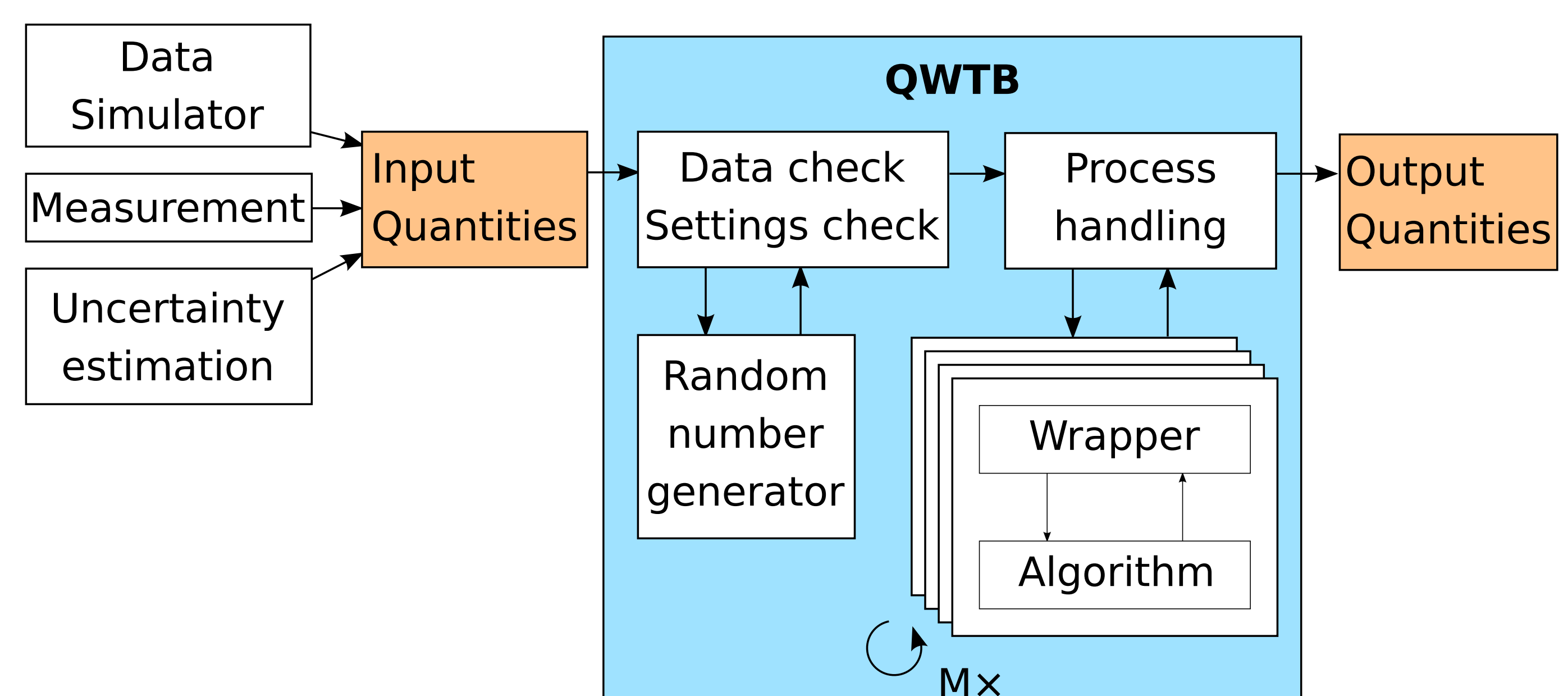
## IMPLEMENTED ALGORITHMS

- Four Parameter Sine Wave Fitting
  - Allan Deviation
  - Modified Allan Deviation
  - Overlapping Allan Deviation
  - Standard Four Parameter Sine Wave Fit according IEEE Std. 1241-2000
  - 2-point interpolated DFT frequency estimator
  - 3-point interpolated DFT frequency estimator
  - Integral Non-Linearity of ADC
  - Differential Non-Linearity of ADC
  - Phase Sensitive Frequency Estimator
  - Spurious Free Dynamic Range
  - Ratio of signal to noise and distortion
  - Effective number of bits (in time space)
  - Spectrum by means of Fast Fourier Transform with uncertainty propagation
  - Calibrations Curve Computing
  - Assynchronous THD
- Coming: power quality electricity meter tests, flickers (TracePQM)

## LABVIEW LIBRARY AND LABVIEW GUI



## QWTB STRUCTURE



**WEB PAGE** <https://qwtb.github.io/qwtb/>

Source code is on **GitHub**.  
Everyone can join developement.



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