

Cumulative Sums Test

Test from NIST document(2.13) available under URL: <https://nvlpubs.nist.gov/nistpubs/legacy/sp/nistspecialpublication800-22r1a.pdf>.

There is only implemented *forward mode* for this test.

Input

File in *.pkl* format with included:

numbers for testing;

n, which is a number of numbers;

Modulus used in PRNG recursion;

PRNG, the name of PRNG used to generate numbers.

Directory with files only in format described in the last point.

Results

As a result you get *p-values* saved in the *p-values.csv* file in the working directory, if non have been specified.

Usage

To use *Cumulative Sums Test*, you need to run *z3Cusum.py* using python version 3 with installed *numpy*, *scipy*, *argparse*, *glob* and *pandas* packages.

To learn how to use this test, it is advised to run programme with one of the following commands:

```
python3 z3Cusum.py --help
```

```
python3 z3Cusum.py -h
```

Examples

```
python3 z3Cusum.py --input-file pickle.pkl
```

```
python3 z3Cusum.py      #if there is a file in working directory described in --help
```

```
python3 z3Cusum.py --input-dir numbers_dir #takes many pickles from directory
```

```
python3 z3Cusum.py --pval-file pvalues.csv #saves p-values in specified .csv file
```