Script usage

usage: create_netlists.py [-h] [--files FILES] [--max_elements MAX_ELEMENTS] [--name NAME] [--CM CM] [--max_CM MAX_CM] [--debug DEBUGLEVEL]

Creating of random netlist

optional arguments:

-h, --help *show this help message and exit*

--files FILES *Number of circuits to be created. (default: 1)*

--max_elements MAX_ELEMENTS *Maximum number of elements per circuit. (default: 1000)*

--name NAME *Base name for circuits to be generated. (default: "rcircuit")*

--CM CM *If CM=1, generate only Current Mirrors (default: 0)*

--max_CM MAX_CM *If CM=1, Max number of Current Mirrors to be integrated (default: 1)*

--debug DEBUGLEVEL *Level for debug messages. (default: 0)*

Script usage - Example

- Create 100 netlists with max. 1000 elements and max. 2 current mirrors
  - create_netlists.py --max_elements 1000 --files 100 --max_CM 2
  - In folder circuits:
    - All netlists: *.sp
    - Logfiles: *.log -> which CMs were chosen

- Create 50 netlists with current mirrors
  - create_netlists.py --files 50 --CM 1
  - In folder CM_circuits :
    - All netlists: *.sp
    - Logfiles: *.log -> which CM was chosen

SPICE Syntax

Resistor: (example)

R67 (net24 net6) R=7.3E4

- Element type: R (resistor)
- Element name: R67
- Connections (pin1, pin2): to nets net24, net6
- Parameter: resistance = 7.3E4

Capacitor: (example)

C65 (net24 net23) C=6.7E-8

- Element type: C (capacitor)
- Element name: C65
- Connections (pin1, pin2): to nets net24, net23
- Parameter: capacitance = 6.7E-8

SPICE Syntax

MOSFET: (example)

T64 (net24 net13 net13 0) nfet L=7.93E-6 W=0.52E-6

- Element type: T (transistor)
- Element name: T64
- Connections (drain, gate, source, bulk): to nets net24 net13 net13 0
- Type: nfet
- Parameters: length = 7.93E-6, width = 0.52E-6