

GEMTOO: User Manual

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GEMTOO: a Modelling Tool for Gain-Cell Embedded DRAMs

This is the user manual of GEMTOO, a modelling tool for gain-cell embedded DRAMs (GC-eDRAMs). The tool can estimate the timing, memory availability, bandwidth and area of a GC-eDRAM. GEMTOO will be publicly released as open-source code once the related article is published.

Most relevant files

The most relevant files are described in Table 1.

Table 1: Most relevant files.

File	Description
./matlab/src/model/gemtoo.m	Main file for the execution of the tool.
./matlab/src/model/gcedram_in.m	The list of <i>input</i> parameters are specified in this file together with a description of each parameter.
./matlab/src/model/gcedram_out.m	The list of <i>output</i> metrics are specified in this file together with a description of each metric.
./matlab/src/inputs/load_28fdsoi_3tn.m	This script loads input parameters of a GC-eDRAM implemented with a 3-transistor all-NMOS gain-cell in 28 nm FD-SOI.
./matlab/src/examples/run_and_print.m	This script is an example of how the tool can be executed and output results are printed.

Example of how to execute the tool

The following instructions can be used to execute a provided example:

- Download the zip archive and extract it.
- Change directory to gemtoo/matlab.
- Launch MATLAB.
- Execute run_and_print.m.