

## 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
<code>./matlab/src/model/gemtoo.m</code>	Main file for the execution of the tool.
<code>./matlab/src/model/gcedram_in.m</code>	The list of <i>input</i> parameters are specified in this file together with a description of each parameter.
<code>./matlab/src/model/gcedram_out.m</code>	The list of <i>output</i> metrics are specified in this file together with a description of each metric.
<code>./matlab/src/inputs/load_28fdsoi_3tn.m</code>	This script loads input parameters of a GC-eDRAM implemented with a 3-transistor all-NMOS gain-cell in 28 nm FD-SOI.
<code>./matlab/src/examples/run_and_print.m</code>	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`.