Simulation files associated with

Spencer, J.P., Ross-Sheehy, S. & Eschman, B. (2022). Testing predictions of a neural process model of visual attention in infancy across competitive and non-competitive contexts. *Infancy*. <https://doi.org/10.1111/infa.12457>.

Key files:

* runIOWA\_BAM\_2022.m: the simulator – see notes in file for details
* Sims1\_2022-04-07-T134046.mat: replication of the final results reported in the paper
* RMSE\_2.m: file used to compute RMSE values and display sim results

**To run the simulator**, download COSIVINA from github.

Then link COSIVINA to your matlab environment by running ‘setpath.m’.

Then run the file runIOWA\_BAM\_2022.m in matlab.

The BAM file is setup to run 1 iteration of the 10 conditions listed on line 171 for a 10mo infant (see line 172). If everything is working, you should see a video of the model in action as it runs.

To run different conditions or ages, just change lines 171 and 172.

**To run a batch of sims**, set the ‘mode’ on line 22 to 2. The model runs pretty fast, but it is really fast if you use parallel computing. As an example, I’ve included the script we use to run the model on our HPC (see ‘hpc\_IOWA-C.job’). It takes about 6min to run 400 simulations for all ages for all conditions.

* If you want to use parallel computing, be sure to uncomment the parfor (see line 452) and comment out the for statement on line 451.

If you are running on a PC, you can also plot the data when done – see ‘plotLatencies’ flag and ‘plotErrorRates’ flag.

**If you want to visualize the Sim results**, run RMSE\_2.m in matlab. Note that Figs 1 and 2 are blank because the .mat file only has one parameter setting (the final params). See the matlab window for the RMSE values. If you run new simulations with multiple parameter sets, Figs 1 and 2 will show you which parameter settings have the best RMSE.

**Credits**:

Thanks to Sebastian Schneegans who wrote the original IOWA simulator. For queries, email John Spencer at [j.spencer@uea.ac.uk](mailto:j.spencer@uea.ac.uk)

Enjoy!