# Running the simulations

**9li\_2ndecay\_path1.sh:** This script runs many different simulations in series. It loops through the parameters that need to be varied, does some formatting and calculations and then runs the simulation for each permutation of parameter values.

**9li\_2ndecay\_path1\_single.sh:** This script runs one simulation, based on values given as arguments to the script call in the command line. Pretty much the same as the 9li\_2ndecay\_path1.sh, but without the loops.

**seaside\_submit\_li11.py:** Python code that applies the loops and calls 9li\_2ndecay\_path1\_single.sh (or scripts like it) to run simulations in parallel on the cluster. Also includes a waiting function that allows for running only *n* number of simulations at a time.

# Fitting simulations to data

**settings.C:** This file should have most of the variables you would need to change in your fitting process.

**fit2dHist.C:** The guts of the simultaneous fitting of multiple histograms. Also the file most likely to be similar to Zach or Mike’s copies. Used as compiled code.

**Looper.C:** Creates a class that allows for looping in a fast way. Usually doesn’t need to be modified. Used as compiled code.

**Fitter.C:** Has the fitting functions. Used as compiled code.

**fit\_init.C:** Creates an index file that lists all the permutations you are going to fit. Run as compiled code, specifically the function fit\_init().

**do\_fitting.C:** Goes through the indices file created by fit\_init.C, does some initial stuff, then throws those indices to the fitting function called from Fitter.C. Exports a chi^2 file (or multiple, depending on how it’s run). Can be modified to run *n* fits in parallel through the seaside cluster.

**plot\_fit\_results.C:** Script that plots the best fit based on the chi^2 file. Run as a script, not compiled code.