Jitter Test for Global Convergence

Originally from Cookbook/Jitter\_test\_example.R

## Example Original Application

* Stock Synthesis (tested in version 3\_30\_X for Windows)
* r4ss (tested in version(s) 1.35.1 - 1.35.3)
* R (tested in version(s) 3.3.2 - 3.5.2 64 bit Windows)

## ImportFrom

* r4ss: SS\_readstarter SS\_writestarter SSsummariize SS\_RunJitter SSplotcomparisons SSgetoutput
* graphics: par, mtext, abline
* grDevices: png

## Procedure

1. Define the SS base case mode run directory
2. Set base case output in the “Reference\_run” subdirectory.
3. Create a base case subdirectory for plots
4. Create a base case subdirectory for “jitter” runs
   1. Copy base case SS files to the jitter directory
5. Read the Jitter starter.ss file (via r4ss::SS\_readStarter) to make changes for jitter runs.
6. Set Initial Parameter Values to 1 to use .par file
   1. “starter$init\_values\_src = 1”.
   2. See Starter File Options in the SS User Manual for Details
7. Set a non-zero Jitter value in the starter file. (0.1 is an arbitrary, but common choice for jitter amount)
   1. “starter$jitter\_fraction = 0.1”
   2. See Starter File Options in the SS User Manual for Details
8. Save (SS\_writestarter) modified Jitter starter file.
9. Set number of iterations
10. SS\_RunJitter: Run Jitter Tests
11. Total likelihoods necessary to assess global convergence are saved to "jit.likes"
12. Summarize

## 

## Jitter Summariation

These tables will be written to the plots directory:

* Table of Jittered initial values
* Total likelihoods necessary to assess global convergence (Step 11)
* “Jitter Results” plot
* Jittering likelihood plots
* Jittering Converged runs plots
* Converged runs at min converged solution plots

These Jitter Results will be written to the jitter run directory:

* Likelihood across jitter runs
* Derived quants across jitter runs
* Estimated parameters across jitter runs
* Retabulated total likelihoods necessary to assess global convergence