**Metadata to be provided with each set of model results uploaded to the Inundation Testbed – SURA Server**

V 2.0

**One new simulations with Hs & Tp animations:**

**Inundation/bio/ww3\_extratropical/runs/ww3\_swan\_wlev\_curr\_2005\_f7/**

**+ add Tp animation to: Inundation/bio/ww3\_extratropical/runs/ww3\_swan\_wlev\_curr\_2005/**

1. **Date/Approx Time files uploaded to server –** useful in case files get moved around on the server

May 30, 2011 2:30 (server time)

1. **Brief description of model run including version # -**

**SWAN + Water Level + currents:** This is a repeat of similar run uploaded May 13, 2011 under

**Inundation/bio/ww3\_extratropical/runs/ww3\_swan\_wlev\_curr\_2005/** (which I call f6 run)

Same as in f6 run, I use the nest file from grid4 “grd4.nst” of previously uploaded result for 2005 storm: **Inundation/bio/ww3\_extratropical/runs/ww3\_swan\_2005/**

I ran SWAN grid 5 with the addition of input hourly water level (from UMASS output) and

input hourly currents (also from UMASS output)

Only the changed settings for f7 run are compared to the settings for f6 run below:

f7 settings f6 settings

------------------ ------------------

1) number of directions = 72 (delta\_theta =5 degrees) (\*1) 36 (delta\_theta =10 degrees)

2) number of frequencies = 35 30

3) f\_low -> f\_high = 0.04118 -> 1.052053 Hz (\*2) 0.04118 -> 0.593856

4) Wind input, + … GEN3 KOMEN AGROW GEN3 WESTHuysen AGROW

5) REFRACTION OFF ON

6) TRIAD OFF ON

7) Numerical Accuracy 0.02 & 98 % 0.05 & 96 %

8) Integration time step = 60 sec (\*3) 12 sec

(\*1) It is recommended for application in coastal areas to use small (2 – 5 degrees) direction

resolution for swell.

(\*2) It is also recommended that f\_high should be at least 2.5 – 3.0 times the highest expected peak

frequency.

(\*3) This large time step is in part justified because the deepest water point in grid5 is only 22 m.

=> the fastest wave (Cp) is mush slower than in deep water (Cp ~ 12 m/s compared to ~38 m/s).

That will increase the CFL permitted time step ( = Dx (m) / Cp (m/s) ) from ~ 1 sec (= 38 m / 38 m/s) to ~ 3 sec (= 38 m / 12 m/s). Then, allow for SWAN implicit propagation scheme a factor 10 times (as in f6) => 10 x 1 sec = 12 sec. Now, for f7 run I allowed a factor 20 times => 20 x 3 sec = 60 sec.

For full description of the input commands see file “INPUT” or “inp\_cmd\_grd5.swn-f7”

Results => Inundation/bio/ww3\_extratropical/runs/ww3\_swan\_wlev\_2005\_f7/

1. **Model name and version #** - this version of the model code should be available on the SURA server

SWAN ver. 40.81

1. **Model input file names** – grid, forcing, parameters, etc – all of these files should be available on the SURA server together with a description of their contents if not self-describing
2. **Summary of key run parameters** –

* time step size;
* 2D/3D/# vertical layers & spacing schema;
* Horizontal closure;
* Vertical mixing closure;
* bottom friction representation and parameters;
* surface drag law and parameters (e.g., cap)

See input swan command file “INPUT” or “inp\_cmd\_grd5.swn-f7”

1. **Model results file names** – including both raw model output and any figures or summary statistics that are computed. All results files should be available on the SURA server together with a description of their contents if not self-describing.

All output files (results) are in grd5/ directory

Description of output time and frequency can be found in the included README files.

1. **Computational resources used** – machine name or a description of the processors if a lab cluster, number of cores used in the run, run execution time (e.g., wall clock time – don’t include time sitting in a queue waiting to start).

The run was executed on BIO cluster using 32 cores (= 4 nodes x 8 cores/node)

(1 node = 2 Xeon X5770 and each Xeon X5770 = 4 cores)

**For the 2005 storm (5d run from 2005050500 to 2005051000)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | Grid | Time step | # sea points | # steps  in 5d | Requested Time in hrs | Execution Time in hr:min |
| SWAN + wlev + curr (f7) | grd5 | 60 sec | 10,381 | 36,300 | 60 h | 37:00 |

1. **Comments / Other** – in case something interesting or unforeseen comes up.

README in ww3\_swan\_wlev\_curr\_2005\_f7/grd5/ directory