Modified from: StormSurgeLocal-Channel2d\_03

Eddy2DRG-Channel2d\_03 (\*surfforce to produce moving wind)

KelvinWavesCoast-Channel2d\_03 (\*modparam; \*grid; \*initial)

Modified Subroutines: Channel2d\_03;

O\_modparam; (Same as KelvinWavesCoast-Channel2d\_03)

O\_grid; (KelvinWavesCoast-Channel2d\_03: Search %ForcedKW:)

O\_initial; (KelvinWavesCoast-Channel2d\_03: Search %ForcedKW:)

O\_outputext; (StormSurgeLocal-Channel2d\_03: \*rng(1)=-1.5 & \*rng(2)=2.5)

O\_xycontour04 (StormSurgeLocal-Channel2d\_03: L120: 2.5\*zrange(2))

O\_solveext; (Same as StormSurgeLocal-Channel2d\_03)

O\_surfforce; (Eddy2DRG-Channel2d\_03: Search %ForcedKW:);

Domain: 900km x 500km x 10m;

g=0.133959190672 chosen so that c=(gh)1/2 gives KW travels 500km in 5 days;

cor0 = 1.15740740741/6.e4 chosen so that Rossby radius = 60 km;

dx=dy= 10km;

Boundary Conditions: x-periodic; radiation North but wall South;

Initial conditions: 0

surfforce: 0, no wind;

modparam: smagc=0; smagc=0; linear=1;

Program Name (plots) progname=['ForcedKWCoast01'] (ForcedKWCoast01\*.png)

Set-up is for the Yellow Highlighted run

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| progname | Comments/Modified Parameters &/or Routines |
| ForcedKWCoast01 | As described above to repeat KelvinWavesCoast24\* but dx=10km instead of 1.25km & north is open instead of wall i.e. KW hump propagation w/o wind, nwindday=999\*86400/dt in \*surfforce\* |
| \*02 | Same as \*01 but no initial hump el0=0 in O\_initial\*; Square xwind 1.5m/s (taux=4.5e-6(m/s)2) 150km wide initially @im/4 propagating @KW speed utc=sqrt(gh) in O\_surfforce\*; |
| \*03 | Same as \*02 but dx=2.5km instead of 10km: O\_grid & O\_initial search for %03 |
| \*04 | Same as \*02 but dx&dy=2.5km instead of 10km & smagc=0.1 : O\_grid & O\_initial search for %03&%04 |
| \*05 | Same as \*02 but North is wall (inst.of.radiation) to demonstrate non-resonance at north bec. opp. KW |
| \*06 | =\*05 but cos wind: uwnd=1.581\*cos(..)\*(abs..) inst. of square wind: uwnd=1.5\*(abs..) – search %06 \*surfforce  (Tried: 1. smol=1.0 & dtfac=0.5 – large osc… no good see plots \* \_smol1dtfacp5.png;  2: smagc=0.1 very similar plots \* \_smagcp1.png) |
| \*07 | =\*06 but North is radiation (inst. of wall); Also %Suppress plots aft. 3d anim in O\_outputext |
| \*08 | =\*06 but utc=0 & uwnd=1.581\*2\*cos(..)\*(abs..) (surfforc). Adjust also O\_outputext\_yzrngm2p0p2p0 & O\_xycontour04\_m2p0p2p0 |
| \*09 | **Identical to \*07** (Rerun to confirm after playing with g=10: ForcedKWCoast09xl900yl600cor1.0e-04day0.000to4.000ni1\_g10.png |