

Unitary Test



vn1.0.3

test_unit_warm_phase

test_unit4

Introduction

First unitary test of the warm phase set of unitary test. It is configured to test the test_unit3 modules of MONC with a simulated time of 40s and to get the mean results after each main part of the calculation of a timestep. It is based on a DOGRA Gaurav's test. In vn1.0.3, the print statement can be activated by setting option 'tracking_variables_enabled' to true.

Configuration

```
clearsourceterms_enabled=.true.
decomposition_enabled=.true.
gridmanager_enabled=.true.
pressure_source_enabled=.true.
grid_manager_enabled=.true.
halo_swapper_enabled=.true.
model_synopsis_enabled=.true.
stepfields_enabled=.true.
stepping_direction_enabled=.true.
swap_smooth_enabled=.true.
termination_check_enabled=.true.

# Component enable configuration
tracking_variables_enabled=.true.
buoyancy_enabled=.false.
cfltest_enabled=.false.
checkpointinter_enabled=.false.
coriolis_enabled=.false.
damping_enabled=.false.
debugger_enabled=.false.
diagnostics_3d_enabled=.false.
diffusion_enabled=.true.
diverr_enabled=.true.
fftsolver_enabled=.true.
vert_filter_enabled=.false.
filter_enabled=.false.
flux_budget_enabled=.false.
forcing_enabled=.false.
iobridge_enabled=.true.
iterativesolver_enabled=.false.
iterativesolver_single_prec_enabled=.false.
kidreader_enabled=.false.
lower_bc_enabled=.true.
mean_profiles_enabled=.true.
petsc_solver_enabled=.false.
physicsa_enabled=.false.
profile_diagnostics_enabled=.false.
```

```
#profile_diagnostics_inc_rhi_enabled=.true.  
psrce_enabled=.true.  
pstep_enabled=.true.  
pw_advection_enabled=.true.  
scalar_diagnostics_enabled=.false.  
set_consistent_lowbc_enabled=.true. #This must be set to true if  
running with lower_bc  
setfluxlook_enabled=.false.  
simplecloud_enabled=.false.  
simplesetup_enabled=.true.  
smagorinsky_enabled=.true.  
subgrid_profile_diagnostics_enabled=.false.  
socrates_couple_enabled=.false.  
th_advection_enabled=.true.  
tvd_advection_enabled=.true.  
viscosity_enabled=.true.  
randomnoise_enabled=.false.  
casim_enabled=.false.  
casim_profile_dgs_enabled=.false.  
lwrad_exponential_enabled=.false.  
lateral_bcs_enabled=.false.  
immersed_boundary_enabled=.false.  
ib_finalise_enabled=.false.  
conditional_diagnostics_column_enabled=.false.  
conditional_diagnostics_whole_enabled=.false.  
pdf_analysis_enabled=.false.  
tracers_enabled=.false.  
trajectories_enabled=.false.  
radioactive_tracers_enabled=.false.  
#test_component_enabled=.true.
```

```
termination_time=40.0  
dtm=0.5
```

RESULTS

```
mean(p)_ts5 = 0.000000000000000000

mean(su)_ts5 = 1.8438812457236469E-022
mean(u)_ts5 = 6.2033847542311884
mean(zu)_ts5 = 6.2033857747182086

mean(sv)_ts5 = 0.000000000000000000
mean(v)_ts5 = 0.000000000000000000
mean(zv)_ts5 = 0.000000000000000000

mean(sw)_ts5 = 0.000000000000000000
mean(w)_ts5 = 0.000000000000000000
mean(zw)_ts5 = 0.000000000000000000

mean(sth)_ts5 = 0.000000000000000000
mean(th)_ts5 = 6.5435410738244064
mean(zth)_ts5 = 6.5435410738244064

mean(sqv)_ts5 = 0.000000000000000000
mean(qv)_ts5 = 6.7235636689015454E-003
mean(zqv)_ts5 = 6.7235636689015454E-003
```

#####

```
[INFO] Number of completed timesteps 81
[INFO] Completed 1 timesteps in 25ms
[INFO] Model time 40.00 seconds; dtm=0.500
```

```
TERMINER MONC
mean(p)_ts6 = 0.000000000000000000

mean(su)_ts6 = 1.8438812457236469E-022
mean(u)_ts6 = 6.2033847542311884
mean(zu)_ts6 = 6.2033857747182086

mean(sv)_ts6 = 0.000000000000000000
mean(v)_ts6 = 0.000000000000000000
mean(zv)_ts6 = 0.000000000000000000

mean(sw)_ts6 = 0.000000000000000000
mean(w)_ts6 = 0.000000000000000000
mean(zw)_ts6 = 0.000000000000000000

mean(sth)_ts6 = 0.000000000000000000
mean(th)_ts6 = 6.5435410738244064
mean(zth)_ts6 = 6.5435410738244064

mean(sqv)_ts6 = 0.000000000000000000
mean(qv)_ts6 = 6.7235636689015454E-003
mean(zqv)_ts6 = 6.7235636689015454E-003
```