```
 1: ================================================================================
 2: READ_ASCII_FILE: unknown
 3: READ_ASCII_FILE: File: input.nml
 4: ================================================================================
 5: READ_INPUT_NML: unknown
 6: READ_INPUT_NML: input.nml
 7:  ï»¿&amip_interp_nml
 8:    interp_oi_sst = .true.
 9:    use_ncep_sst = .true.
10:    use_ncep_ice = .false.
11:    no_anom_sst = .false.
12:    data_set = 'reynolds_oi'
13:    date_out_of_range = 'climo'
14:  /
15:
16:
17:  &atmos_model_nml
18:    blocksize = 32
19:    chksum_debug = .false.
20:    dycore_only = .false.
21:    fdiag = 1
22:    fhmax = 384
23:    fhout = 3
24:    fhmaxhf = 120
25:    fhouthf = 1
26:    ccpp_suite = 'FV3_GFS_v15p2'
27:  /
28:
29:
30:  &diag_manager_nml
31:    prepend_date = .false.
32:  /
33:
34:
35:  &fms_io_nml
36:    checksum_required = .false.
37:    max_files_r = 100
38:    max_files_w = 100
39:  /
40:
41:
42:  &fms_nml
43:    clock_grain = 'ROUTINE'
44:    domains_stack_size = 6000000
45:    print_memory_usage = .false.
46:  /
47:
48:
49:  &fv_core_nml
50:    layout = 1,1
51:    io_layout = 1,1
52:    npx = 193
53:    npy = 193
54:    ntiles = 6
55:    npz = 64
56:    grid_type = -1
57:    make_nh = .false.
```

```
 58:    fv_debug = .false.
 59:    range_warn = .false.
 60:    reset_eta = .false.
 61:    n_sponge = 10
 62:    nudge_qv = .true.
 63:    nudge_dz = .false.
 64:    tau = 10.
 65:    rf_cutoff = 7.5e2
 66:    d2_bg_k1 = 0.15
 67:    d2_bg_k2 = 0.02
 68:    kord_tm = -9
 69:    kord_mt = 9
 70:    kord_wz = 9
 71:    kord_tr = 9
 72:    hydrostatic = .false.
 73:    phys_hydrostatic = .false.
 74:    use_hydro_pressure = .false.
 75:    beta = 0.
 76:    a_imp = 1.
 77:    p_fac = 0.1
 78:    k_split = 2
 79:    n_split = 6
 80:    nwat = 6
 81:    na_init = 0
 82:    d_ext = 0.
 83:    dnats = 1
 84:    fv_sg_adj = 450
 85:    d2_bg = 0.
 86:   nord = 2
 87:    dddmp = 0.1
 88:    d4_bg = 0.12
 89:    vtdm4 = 0.02
 90:    delt_max = 0.002
 91:    ke_bg = 0.
 92:    do_vort_damp = .true.
 93:    external_ic = .true.
 94:    external_eta = .true.
 95:    gfs_phil = .false.
 96:    nggps_ic = .true.
 97:    mountain = .false.
 98:    ncep_ic = .false.
 99:    d_con = 1.
100:    hord_mt = 5
101:    hord_vt = 5
102:    hord_tm = 5
103:    hord_dp = -5
104:    hord_tr = 8
105:    adjust_dry_mass = .false.
106:    consv_te = 1.
107:    do_sat_adj = .true.
108:    consv_am = .false.
109:    fill = .true.
110:    dwind_2d = .false.
111:    print_freq = 6
112:    warm_start = .false.
113:    no_dycore = .false.
114:    z_tracer = .true.
```

```
115:    agrid_vel_rst = .true.
116:    read_increment = .false.
117:    res_latlon_dynamics = ""
118:  /
119:
120:
121:  &external_ic_nml
122:    filtered_terrain = .true.
123:    levp = 65
124:    gfs_dwinds = .true.
125:    checker_tr = .false.
126:    nt_checker = 0
127:  /
128:
129:
130:  &gfs_physics_nml
131:    fhzero       = 6
132:    h2o_phys     = .true.
133:    ldiag3d      = .false.
134:    fhcyc        = 24
135:    use_ufo      = .true.
136:    pre_rad      = .false.
137:    ncld         = 5
138:    imp_physics  = 11
139:    pdfcld       = .false.
140:    fhswr        = 3600.
141:    fhlwr        = 3600.
142:    ialb         = 1
143:    iems         = 1
144:    iaer         = 111
145:    ico2         = 2
146:    isubc_sw     = 2
147:    isubc_lw     = 2
148:    isol         = 2
149:    lwhtr        = .true.
150:    swhtr        = .true.
151:    cnvgwd       = .true.
152:    shal_cnv     = .true.
153:    cal_pre      = .false.
154:    redrag       = .true.
155:    dspheat      = .true.
156:    hybedmf      = .true.
157:    random_clds  = .false.
158:    trans_trac   = .true.
159:    cnvcld       = .true.
160:    imfshalcnv   = 2
161:    imfdeepcnv   = 2
162:    cdmbgwd      = 3.5,0.25
163:    prslrd0      = 0.
164:    ivegsrc      = 1
165:    isot         = 1
166:    debug        = .false.
167:    oz_phys        = .F.
168:    oz_phys_2015   = .T.
169:    nstf_name    = 2,1,0,0,0
170:    nst_anl      = .true.
171:    psautco      = 0.0008,0.0005
```

```
172:    prautco      = 0.00015,0.00015
173:    lgfdlmprad   = .true.
174:    effr_in      = .true.
175:    do_sppt        = .T.
176:    do_shum        = .T.
177:    do_skeb        = .T.
178:    do_sfcperts    = .F.
179:  /
180:
181:
182:  &gfdl_cloud_microphysics_nml
183:    sedi_transport = .true.
184:    do_sedi_heat = .false.
185:    rad_snow = .true.
186:    rad_graupel = .true.
187:    rad_rain = .true.
188:    const_vi = .F.
189:    const_vs = .F.
190:    const_vg = .F.
191:    const_vr = .F.
192:    vi_max = 1.
193:    vs_max = 2.
194:    vg_max = 12.
195:    vr_max = 12.
196:    qi_lim = 1.
197:    prog_ccn = .false.
198:    do_qa = .true.
199:    fast_sat_adj = .true.
200:    tau_l2v = 225.
201:    tau_v2l = 150.
202:    tau_g2v = 900.
203:    rthresh = 10.e-6  ! This is a key parameter for cloud water
204:    dw_land  = 0.16
205:    dw_ocean = 0.10
206:    ql_gen = 1.0e-3
207:    ql_mlt = 1.0e-3
208:    qi0_crt = 8.0E-5
209:    qs0_crt = 1.0e-3
210:    tau_i2s = 1000.
211:    c_psaci = 0.05
212:    c_pgacs = 0.01
213:    rh_inc = 0.30
214:    rh_inr = 0.30
215:    rh_ins = 0.30
216:    ccn_l = 300.
217:    ccn_o = 100.
218:    c_paut = 0.5
219:    c_cracw = 0.8
220:    use_ppm = .false.
221:    use_ccn = .true.
222:    mono_prof = .true.
223:    z_slope_liq  = .true.
224:    z_slope_ice  = .true.
225:    de_ice = .false.
226:    fix_negative = .true.
227:    icloud_f = 1
228:    mp_time = 150.
```

```
/


&interpolator_nml
  interp_method = 'conserve_great_circle'
/


&namsfc
       FNGLAC   = "global_glacier.2x2.grb",
       FNMXIC   = "global_maxice.2x2.grb",
       FNTSFC   = "RTGSST.1982.2012.monthly.clim.grb",
       FNSNOC   = "global_snoclim.1.875.grb",
       FNZORC   = "igbp",
       FNALBC   = "global_snowfree_albedo.bosu.t382.768.384.rg.grb",
       FNALBC2  = "global_albedo4.1x1.grb",
       FNAISC   = "CFSR.SEAICE.1982.2012.monthly.clim.grb",
       FNTG3C   = "global_tg3clim.2.6x1.5.grb",
       FNVEGC   = "global_vegfrac.0.144.decpercent.grb",
       FNVETC   = "global_vegtype.igbp.t382.768.384.rg.grb",
       FNSOTC   = "global_soiltype.statsgo.t382.768.384.rg.grb",
       FNSMCC   = "global_soilmgldas.t382.768.384.grb",
       FNMSKH   = "seaice_newland.grb",
       FNTSFA   = "",
       FNACNA   = "",
       FNSNOA   = "",
       FNVMNC   = "global_shdmin.0.144x0.144.grb",
       FNVMXC   = "global_shdmax.0.144x0.144.grb",
       FNSLPC   = "global_slope.1x1.grb",
       FNABSC   = "global_mxsnoalb.uariz.t382.768.384.rg.grb",
       LDEBUG   =.false.,
       FSMCL(2) = 99999
       FSMCL(3) = 99999
       FSMCL(4) = 99999
       FTSFS    = 90
       FSNOL    = 99999
       FSICL    = 99999
       FTSFL    = 99999,
       FAISL    = 99999,
       FVETL    = 99999,
       FSOTL    = 99999,
       FvmnL    = 99999,
       FvmxL    = 99999,
       FSLPL    = 99999,
       FABSL    = 99999,
/

&fv_grid_nml
  grid_file = 'INPUT/grid_spec.nc'
/

&nam_stochy
  ntrunc = 766
  lon_s = 1536
  lat_s = 768
  skeb = 0.3
  iseed_skeb = 2019102712451
```

```
286:    iseed_shum = 2019102712452
287:    iseed_sppt = 2019102712453
288:    skeb_tau = 21600.
289:    skeb_lscale = 500000.
290:    skebnorm = 0
291:    skeb_npass = 30
292:    skeb_vdof = 5
293:    shum = 0.005
294:    shum_tau = 21600.
295:    shum_lscale = 500000.
296:    sppt = 0.5
297:    sppt_tau = 21600.
298:    sppt_lscale = 500000.
299:    sppt_logit = .true.
300:    sppt_sfclimit = .true.
301:    use_zmtnblck = .true.
302:  /
303:
304:  &nam_sfcperts
305:  /
306:
307:  &cires_ugwp_nml
308:  /
309:
310:
311:
312: MPP module unknown
313: MPP started with NPES=     6
314: Using MPI library for message passing...
315: Realtime clock resolution=  1.0000E-06 sec (   1000000 ticks/sec)
316: Clock rolls over after   9.2234E+12 sec ( 9223372036854775806 ticks)
317:
318: MPP Parameter module unknown
319:
320: MPP Data module unknown
321:
322: MPP_DOMAINS module unknown
323:  &MPP_IO_NML
324:  HEADER_BUFFER_VAL       =       16384,
325:  GLOBAL_FIELD_ON_ROOT_PE = T,
326:  IO_CLOCKS_ON    = F,
327:  SHUFFLE =           0,
328:  DEFLATE_LEVEL   =          -1,
329:  CF_COMPLIANCE   = F
330:  /
331:
332: MPP_IO module unknown
333:
334: Using netCDF library version 4.7.3 of Aug  7 2020 10:59:28 $
335:
336: ================================================================================
     ===
337: FMS_IO_MOD
338: unknown
339:
340: ================================================================================
     ===
```

```
341: FMS_MOD
342: unknown
343:  &FMS_NML
344:  READ_ALL_PE     = T,
345:  CLOCK_GRAIN     = ROUTINE         ,
346:  CLOCK_FLAGS     = NONE            ,
347:  WARNING_LEVEL   = warning ,
348:  IOSPEC_IEEE32   = -N ieee_32
          ,
349:  STACK_SIZE      =           0,
350:  DOMAINS_STACK_SIZE      =     6000000,
351:  PRINT_MEMORY_USAGE      = F
352:  /
353:  nml_error_codes=
354:
355: ================================================================================
     ===
356: CONSTANTS_MOD
357: unknown
358:
359: ================================================================================
     ===
360: SAT_VAPOR_PRES_MOD
361: unknown
362:  &SAT_VAPOR_PRES_NML
363:  SHOW_BAD_VALUE_COUNT_BY_SLICE   = T,
364:  SHOW_ALL_BAD_VALUES     = F,
365:  USE_EXACT_QS    = F,
366:  DO_SIMPLE       = F,
367:  CONSTRUCT_TABLE_WRT_LIQ = F,
368:  CONSTRUCT_TABLE_WRT_LIQ_AND_ICE = F
369:  /
370:
371: ================================================================================
     ===
372: TIME_MANAGER_MOD
373: unknown
374:
375: ================================================================================
     ===
376: DIAG_UTIL_MOD
377: unknown
378:
379: ================================================================================
     ===
380: DIAG_DATA_MOD
381: unknown
382:
383: ================================================================================
     ===
384: DIAG_MANAGER_MOD
385: unknown
386:  &DIAG_MANAGER_NML
387:  APPEND_PELIST_NAME      = F,
388:  MIX_SNAPSHOT_AVERAGE_FIELDS     = F,
389:  MAX_OUTPUT_FIELDS       =         300,
390:  MAX_INPUT_FIELDS        =         600,
```

```
391:  MAX_AXES        =          60,
392:  DO_DIAG_FIELD_LOG       = F,
393:  WRITE_BYTES_IN_FILE     = F,
394:  DEBUG_DIAG_MANAGER      = F,
395:  MAX_NUM_AXIS_SETS       =          25,
396:  MAX_FILES       =          31,
397:  USE_CMOR        = F,
398:  ISSUE_OOR_WARNINGS      = T,
399:  OOR_WARNINGS_FATAL      = F,
400:  MAX_OUT_PER_IN_FIELD    =         150,
401:  FLUSH_NC_FILES  = F,
402:  REGION_OUT_USE_ALT_VALUE        = T,
403:  MAX_FIELD_ATTRIBUTES    =           4,
404:  MAX_FILE_ATTRIBUTES     =           2,
405:  MAX_AXIS_ATTRIBUTES     =           4,
406:  PREPEND_DATE    = F,
407:  WRITE_MANIFEST_FILE     = F
408:  /
409: ================================================================================
410: READ_ASCII_FILE: unknown
411: READ_ASCII_FILE: File: diag_table
412: base date used = 2019 August 29  0:00:00 gmt
413:
414: ================================================================================
     ===
415: DIAG_AXIS_MOD
416: unknown
417:
418: ================================================================================
     ===
419: FV_CONTROL_MOD
420: unknown
421:  &FV_GRID_NML
422:  GRID_NAME       =
                          ,
423:  GRID_FILE       = INPUT/grid_spec.nc

424:
425:  /
426: ================================================================================
427: READ_ASCII_FILE: unknown
428: READ_ASCII_FILE: File: input.nml
429: ================================================================================
430: READ_INPUT_NML: unknown
431: READ_INPUT_NML: input.nml
432:  ï»¿&amip_interp_nml
433:    interp_oi_sst = .true.
434:    use_ncep_sst = .true.
435:    use_ncep_ice = .false.
436:    no_anom_sst = .false.
437:    data_set = 'reynolds_oi'
438:    date_out_of_range = 'climo'
439:  /
440:
441:
442:  &atmos_model_nml
443:    blocksize = 32
```

```
444:    chksum_debug = .false.
445:    dycore_only = .false.
446:    fdiag = 1
447:    fhmax = 384
448:    fhout = 3
449:    fhmaxhf = 120
450:    fhouthf = 1
451:    ccpp_suite = 'FV3_GFS_v15p2'
452:  /
453:
454:
455:  &diag_manager_nml
456:    prepend_date = .false.
457:  /
458:
459:
460:  &fms_io_nml
461:    checksum_required = .false.
462:    max_files_r = 100
463:    max_files_w = 100
464:  /
465:
466:
467:  &fms_nml
468:    clock_grain = 'ROUTINE'
469:    domains_stack_size = 6000000
470:    print_memory_usage = .false.
471:  /
472:
473:
474:  &fv_core_nml
475:    layout = 1,1
476:    io_layout = 1,1
477:    npx = 193
478:    npy = 193
479:    ntiles = 6
480:    npz = 64
481:    grid_type = -1
482:    make_nh = .false.
483:    fv_debug = .false.
484:    range_warn = .false.
485:    reset_eta = .false.
486:    n_sponge = 10
487:    nudge_qv = .true.
488:    nudge_dz = .false.
489:    tau = 10.
490:    rf_cutoff = 7.5e2
491:    d2_bg_k1 = 0.15
492:    d2_bg_k2 = 0.02
493:    kord_tm = -9
494:    kord_mt = 9
495:    kord_wz = 9
496:    kord_tr = 9
497:    hydrostatic = .false.
498:    phys_hydrostatic = .false.
499:    use_hydro_pressure = .false.
500:    beta = 0.
```

```
501:    a_imp = 1.
502:    p_fac = 0.1
503:    k_split = 2
504:    n_split = 6
505:    nwat = 6
506:    na_init = 0
507:    d_ext = 0.
508:    dnats = 1
509:    fv_sg_adj = 450
510:    d2_bg = 0.
511:   nord = 2
512:    dddmp = 0.1
513:    d4_bg = 0.12
514:    vtdm4 = 0.02
515:    delt_max = 0.002
516:    ke_bg = 0.
517:    do_vort_damp = .true.
518:    external_ic = .true.
519:    external_eta = .true.
520:    gfs_phil = .false.
521:    nggps_ic = .true.
522:    mountain = .false.
523:    ncep_ic = .false.
524:    d_con = 1.
525:    hord_mt = 5
526:    hord_vt = 5
527:    hord_tm = 5
528:    hord_dp = -5
529:    hord_tr = 8
530:    adjust_dry_mass = .false.
531:    consv_te = 1.
532:    do_sat_adj = .true.
533:    consv_am = .false.
534:    fill = .true.
535:    dwind_2d = .false.
536:    print_freq = 6
537:    warm_start = .false.
538:    no_dycore = .false.
539:    z_tracer = .true.
540:    agrid_vel_rst = .true.
541:    read_increment = .false.
542:    res_latlon_dynamics = ""
543:  /
544:
545:
546:  &external_ic_nml
547:    filtered_terrain = .true.
548:    levp = 65
549:    gfs_dwinds = .true.
550:    checker_tr = .false.
551:    nt_checker = 0
552:  /
553:
554:
555:  &gfs_physics_nml
556:    fhzero       = 6
557:    h2o_phys     = .true.
```

```
  ldiag3d      = .false.
  fhcyc        = 24
  use_ufo      = .true.
  pre_rad      = .false.
  ncld         = 5
  imp_physics  = 11
  pdfcld       = .false.
  fhswr        = 3600.
  fhlwr        = 3600.
  ialb         = 1
  iems         = 1
  iaer         = 111
  ico2         = 2
  isubc_sw     = 2
  isubc_lw     = 2
  isol         = 2
  lwhtr        = .true.
  swhtr        = .true.
  cnvgwd       = .true.
  shal_cnv     = .true.
  cal_pre      = .false.
  redrag       = .true.
  dspheat      = .true.
  hybedmf      = .true.
  random_clds  = .false.
  trans_trac   = .true.
  cnvcld       = .true.
  imfshalcnv   = 2
  imfdeepcnv   = 2
  cdmbgwd      = 3.5,0.25
  prslrd0      = 0.
  ivegsrc      = 1
  isot         = 1
  debug        = .false.
  oz_phys        = .F.
  oz_phys_2015   = .T.
  nstf_name    = 2,1,0,0,0
  nst_anl      = .true.
  psautco      = 0.0008,0.0005
  prautco      = 0.00015,0.00015
  lgfdlmprad   = .true.
  effr_in      = .true.
  do_sppt        = .T.
  do_shum        = .T.
  do_skeb        = .T.
  do_sfcperts    = .F.
/


&gfdl_cloud_microphysics_nml
  sedi_transport = .true.
  do_sedi_heat = .false.
  rad_snow = .true.
  rad_graupel = .true.
  rad_rain = .true.
  const_vi = .F.
  const_vs = .F.
```

```
615:    const_vg = .F.
616:    const_vr = .F.
617:    vi_max = 1.
618:    vs_max = 2.
619:    vg_max = 12.
620:    vr_max = 12.
621:    qi_lim = 1.
622:    prog_ccn = .false.
623:    do_qa = .true.
624:    fast_sat_adj = .true.
625:    tau_l2v = 225.
626:    tau_v2l = 150.
627:    tau_g2v = 900.
628:    rthresh = 10.e-6  ! This is a key parameter for cloud water
629:    dw_land  = 0.16
630:    dw_ocean = 0.10
631:    ql_gen = 1.0e-3
632:    ql_mlt = 1.0e-3
633:    qi0_crt = 8.0E-5
634:    qs0_crt = 1.0e-3
635:    tau_i2s = 1000.
636:    c_psaci = 0.05
637:    c_pgacs = 0.01
638:    rh_inc = 0.30
639:    rh_inr = 0.30
640:    rh_ins = 0.30
641:    ccn_l = 300.
642:    ccn_o = 100.
643:    c_paut = 0.5
644:    c_cracw = 0.8
645:    use_ppm = .false.
646:    use_ccn = .true.
647:    mono_prof = .true.
648:    z_slope_liq  = .true.
649:    z_slope_ice  = .true.
650:    de_ice = .false.
651:    fix_negative = .true.
652:    icloud_f = 1
653:    mp_time = 150.
654:  /
655:
656:
657:  &interpolator_nml
658:    interp_method = 'conserve_great_circle'
659:  /
660:
661:
662:  &namsfc
663:         FNGLAC   = "global_glacier.2x2.grb",
664:         FNMXIC   = "global_maxice.2x2.grb",
665:         FNTSFC   = "RTGSST.1982.2012.monthly.clim.grb",
666:         FNSNOC   = "global_snoclim.1.875.grb",
667:         FNZORC   = "igbp",
668:         FNALBC   = "global_snowfree_albedo.bosu.t382.768.384.rg.grb",
669:         FNALBC2  = "global_albedo4.1x1.grb",
670:         FNAISC   = "CFSR.SEAICE.1982.2012.monthly.clim.grb",
671:         FNTG3C   = "global_tg3clim.2.6x1.5.grb",
```

```
672:         FNVEGC   = "global_vegfrac.0.144.decpercent.grb",
673:         FNVETC   = "global_vegtype.igbp.t382.768.384.rg.grb",
674:         FNSOTC   = "global_soiltype.statsgo.t382.768.384.rg.grb",
675:         FNSMCC   = "global_soilmgldas.t382.768.384.grb",
676:         FNMSKH   = "seaice_newland.grb",
677:         FNTSFA   = "",
678:         FNACNA   = "",
679:         FNSNOA   = "",
680:         FNVMNC   = "global_shdmin.0.144x0.144.grb",
681:         FNVMXC   = "global_shdmax.0.144x0.144.grb",
682:         FNSLPC   = "global_slope.1x1.grb",
683:         FNABSC   = "global_mxsnoalb.uariz.t382.768.384.rg.grb",
684:         LDEBUG   =.false.,
685:         FSMCL(2) = 99999
686:         FSMCL(3) = 99999
687:         FSMCL(4) = 99999
688:         FTSFS    = 90
689:         FSNOL    = 99999
690:         FSICL    = 99999
691:         FTSFL    = 99999,
692:         FAISL    = 99999,
693:         FVETL    = 99999,
694:         FSOTL    = 99999,
695:         FvmnL    = 99999,
696:         FvmxL    = 99999,
697:         FSLPL    = 99999,
698:         FABSL    = 99999,
699:  /
700:
701:  &fv_grid_nml
702:    grid_file = 'INPUT/grid_spec.nc'
703:  /
704:
705:  &nam_stochy
706:    ntrunc = 766
707:    lon_s = 1536
708:    lat_s = 768
709:    skeb = 0.3
710:    iseed_skeb = 2019102712451
711:    iseed_shum = 2019102712452
712:    iseed_sppt = 2019102712453
713:    skeb_tau = 21600.
714:    skeb_lscale = 500000.
715:    skebnorm = 0
716:    skeb_npass = 30
717:    skeb_vdof = 5
718:    shum = 0.005
719:    shum_tau = 21600.
720:    shum_lscale = 500000.
721:    sppt = 0.5
722:    sppt_tau = 21600.
723:    sppt_lscale = 500000.
724:    sppt_logit = .true.
725:    sppt_sfclimit = .true.
726:    use_zmtnblck = .true.
727:  /
728:
```

```
729:  &nam_sfcperts
730:  /
731:
732:  &cires_ugwp_nml
733:  /
734:
735:
736:  &FV_CORE_NML
737:  NPX     =         193,
738:  NPY     =         193,
739:  NTILES  =           6,
740:  NPZ     =          64,
741:  NPZ_RST =           0,
742:  LAYOUT  = 2*1,
743:  IO_LAYOUT       = 2*1,
744:  NCNST   =           0,
745:  NWAT    =           6,
746:  USE_LOGP        = F,
747:  P_FAC   =  0.100000000000000     ,
748:  A_IMP   =   1.00000000000000     ,
749:  K_SPLIT =           2,
750:  N_SPLIT =           6,
751:  M_SPLIT =           0,
752:  Q_SPLIT =           0,
753:  PRINT_FREQ      =           6,
754:  WRITE_3D_DIAGS  = T,
755:  DO_SCHMIDT      = F,
756:  HORD_MT =           5,
757:  HORD_VT =           5,
758:  HORD_TM =           5,
759:  HORD_DP =          -5,
760:  HORD_TR =           8,
761:  SHIFT_FAC       =   18.0000000000000     ,
762:  STRETCH_FAC     =   1.00000000000000     ,
763:  TARGET_LAT      =  -90.0000000000000     ,
764:  TARGET_LON      =  0.000000000000000E+000,
765:  KORD_MT =           9,
766:  KORD_WZ =           9,
767:  KORD_TM =          -9,
768:  KORD_TR =           9,
769:  FV_DEBUG        = F,
770:  FV_LAND = F,
771:  NUDGE   = F,
772:  DO_SAT_ADJ      = T,
773:  DO_F3D  = F,
774:  EXTERNAL_IC     = T,
775:  READ_INCREMENT  = F,
776:  NCEP_IC = F,
777:  NGGPS_IC        = T,
778:  ECMWF_IC        = F,
779:  USE_NEW_NCEP    = F,
780:  USE_NCEP_PHY    = F,
781:  FV_DIAG_IC      = F,
782:  EXTERNAL_ETA    = T,
783:  RES_LATLON_DYNAMICS     =

784:                       ,
```

```
785:  RES_LATLON_TRACERS      =

786:                          ,
787:  SCALE_Z =  0.000000000000000E+000,
788:  W_MAX   =   75.0000000000000     ,
789:  Z_MIN   =  5.000000000000000E-002,
790:  LIM_FAC =   1.00000000000000     ,
791:  DDDMP   =  0.100000000000000     ,
792:  D2_BG   =  0.000000000000000E+000,
793:  D4_BG   =  0.120000000000000     ,
794:  VTDM4   =  2.000000000000000E-002,
795:  TRDM2   =  0.000000000000000E+000,
796:  D_EXT   =  0.000000000000000E+000,
797:  DELT_MAX        =  2.000000000000000E-003,
798:  BETA    =  0.000000000000000E+000,
799:  NON_ORTHO       = T,
800:  N_SPONGE        =          10,
801:  WARM_START      = F,
802:  ADJUST_DRY_MASS = F,
803:  MOUNTAIN        = F,
804:  D_CON   =   1.00000000000000     ,
805:  KE_BG   =  0.000000000000000E+000,
806:  NORD    =           2,
807:  NORD_TR =           0,
808:  CONVERT_KE      = F,
809:  USE_OLD_OMEGA   = T,
810:  DRY_MASS        =   98290.0000000000     ,
811:  GRID_TYPE       =          -1,
812:  DO_HELD_SUAREZ  = F,
813:  DO_REED_PHYSICS = F,
814:  REED_COND_ONLY  = F,
815:  CONSV_TE        =   1.00000000000000     ,
816:  FILL    = T,
817:  FILTER_PHYS     = F,
818:  FILL_DP = F,
819:  FILL_WZ = F,
820:  CONSV_AM        = F,
821:  RF_FAST = F,
822:  RANGE_WARN      = F,
823:  DWIND_2D        = F,
824:  INLINE_Q        = F,
825:  Z_TRACER        = T,
826:  REPRODUCE_SUM   = T,
827:  ADIABATIC       = F,
828:  DO_VORT_DAMP    = T,
829:  NO_DYCORE       = F,
830:  TAU     =   10.0000000000000     ,
831:  TAU_H2O =  0.000000000000000E+000,
832:  RF_CUTOFF       =   750.000000000000     ,
833:  NF_OMEGA        =           1,
834:  HYDROSTATIC     = F,
835:  FV_SG_ADJ       =         450,
836:  BREED_VORTEX_INLINE     = F,
837:  NA_INIT =           0,
838:  NUDGE_DZ        = F,
839:  HYBRID_Z        = F,
840:  MAKE_NH = F,
```

```
841:  N_ZS_FILTER     =           0,
842:  NORD_ZS_FILTER  =           4,
843:  FULL_ZS_FILTER  = F,
844:  RESET_ETA       = F,
845:  PNATS   =           0,
846:  DNATS   =           1,
847:  A2B_ORD =           4,
848:  REMAP_T = T,
849:  P_REF   =   100000.000000000     ,
850:  D2_BG_K1        =  0.150000000000000     ,
851:  D2_BG_K2        =  2.000000000000000E-002,
852:  C2L_ORD =           4,
853:  DX_CONST        =   1000.00000000000     ,
854:  DY_CONST        =   1000.00000000000     ,
855:  UMAX    =   350.000000000000     ,
856:  DEGLAT  =   15.0000000000000     ,
857:  DEGLON_START    =  -30.0000000000000     ,
858:  DEGLON_STOP     =   30.0000000000000     ,
859:  DEGLAT_START    =  -30.0000000000000     ,
860:  DEGLAT_STOP     =   30.0000000000000     ,
861:  PHYS_HYDROSTATIC        = F,
862:  USE_HYDRO_PRESSURE      = F,
863:  MAKE_HYBRID_Z   = F,
864:  OLD_DIVG_DAMP   = F,
865:  ADD_NOISE       =  -1.00000000000000     ,
866:  NESTED  = F,
867:  TWOWAYNEST      = F,
868:  PARENT_GRID_NUM =          -1,
869:  PARENT_TILE     =           1,
870:  NUDGE_QV        = T,
871:  REFINEMENT      =           3,
872:  NESTBCTYPE      =           1,
873:  NESTUPDATE      =           0,
874:  NSPONGE =           0,
875:  S_WEIGHT        =  1.000000000000000E-006,
876:  IOFFSET =           0,
877:  JOFFSET =           0,
878:  CHECK_NEGATIVE  = F,
879:  NUDGE_IC        = F,
880:  HALO_UPDATE_TYPE        =           1,
881:  GFS_PHIL        = F,
882:  AGRID_VEL_RST   = T,
883:  DO_UNI_ZFULL    = F,
884:  ADJ_MASS_VMR    = F,
885:  FAC_N_SPL       =   1.00000000000000     ,
886:  FHOURI  =  0.000000000000000E+000,
887:  REGIONAL        = F,
888:  BC_UPDATE_INTERVAL      =           3
889:  /
890:  &TEST_CASE_NML
891:  TEST_CASE       =          11,
892:  BUBBLE_DO       = F,
893:  ALPHA   =  0.000000000000000E+000,
894:  NSOLITONS       =           0,
895:  SOLITON_UMAX    =   50.0000000000000     ,
896:  SOLITON_SIZE    =   750000.000000000
897:  /
```

```
898:
899: Cubic: cubed-sphere domain decomposition:     1 X    1
900:    pe,   is,  ie,  js,  je,    isd, ied, jsd, jed
901:
902: Cubic: cubed-sphere domain decomposition:     1 X    1
903:    pe,   is,  ie,  js,  je,    isd, ied, jsd, jed
904:
905: ================================================================================
     ===
906: TRACER_MANAGER_MOD
907: unknown
908:
909: ================================================================================
     ===
910: FIELD_MANAGER_MOD
911: unknown
912: # added by FRE: sphum must be present in atmos
913: # specific humidity for moist runs
914:  "TRACER", "atmos_mod", "sphum"
```

```
915: # prognostic cloud water mixing ratio
916:  "TRACER", "atmos_mod", "liq_wat"
917:  "TRACER", "atmos_mod", "rainwat"
918:  "TRACER", "atmos_mod", "ice_wat"
919:  "TRACER", "atmos_mod", "snowwat"
```

```
920:  "TRACER", "atmos_mod", "graupel"

921: # prognostic ozone mixing ratio tracer

922:  "TRACER", "atmos_mod", "o3mr"

923: # prognostic subgrid scale turbulent kinetic energy

924:  "TRACER", "atmos_mod", "sgs_tke"
```

```
925: # non-prognostic cloud amount

926:  "TRACER", "atmos_mod", "cld_amt"

927:  ------------------------------------------------
928:  Contents of tracer entry            1
929:  Model type and field name
930:  Model                 :            1
931:  Field name            : sphum
932:  Tracer units          : kg/kg
933:  Tracer longname       : specific humidity
934:  Tracer is_prognostic :  T
935:  ------------------------------------------------
936:  ------------------------------------------------
937:  Contents of tracer entry            2
938:  Model type and field name
939:  Model                 :            1
940:  Field name            : liq_wat
941:  Tracer units          : kg/kg
942:  Tracer longname       : cloud water mixing ratio
943:  Tracer is_prognostic :  T
944:  ------------------------------------------------
945:  ------------------------------------------------
946:  Contents of tracer entry            3
947:  Model type and field name
948:  Model                 :            1
949:  Field name            : rainwat
950:  Tracer units          : kg/kg
951:  Tracer longname       : rain mixing ratio
952:  Tracer is_prognostic :  T
953:  ------------------------------------------------
954:  ------------------------------------------------
955:  Contents of tracer entry            4
```

```
 956:  Model type and field name
 957:  Model                 :           1
 958:  Field name            : ice_wat
 959:  Tracer units          : kg/kg
 960:  Tracer longname       : cloud ice mixing ratio
 961:  Tracer is_prognostic :  T
 962:  ---------------------------------------------------
 963:  ---------------------------------------------------
 964:  Contents of tracer entry            5
 965:  Model type and field name
 966:  Model                 :           1
 967:  Field name            : snowwat
 968:  Tracer units          : kg/kg
 969:  Tracer longname       : snow mixing ratio
 970:  Tracer is_prognostic :  T
 971:  ---------------------------------------------------
 972:  ---------------------------------------------------
 973:  Contents of tracer entry            6
 974:  Model type and field name
 975:  Model                 :           1
 976:  Field name            : graupel
 977:  Tracer units          : kg/kg
 978:  Tracer longname       : graupel mixing ratio
 979:  Tracer is_prognostic :  T
 980:  ---------------------------------------------------
 981:  ---------------------------------------------------
 982:  Contents of tracer entry            7
 983:  Model type and field name
 984:  Model                 :           1
 985:  Field name            : o3mr
 986:  Tracer units          : kg/kg
 987:  Tracer longname       : ozone mixing ratio
 988:  Tracer is_prognostic :  T
 989:  ---------------------------------------------------
 990:  ---------------------------------------------------
 991:  Contents of tracer entry            8
 992:  Model type and field name
 993:  Model                 :           1
 994:  Field name            : sgs_tke
 995:  Tracer units          : m2/s2
 996:  Tracer longname       : subgrid scale turbulent kinetic energy
 997:  Tracer is_prognostic :  T
 998:  ---------------------------------------------------
 999:  ---------------------------------------------------
1000:  Contents of tracer entry            9
1001:  Model type and field name
1002:  Model                 :           1
1003:  Field name            : cld_amt
1004:  Tracer units          : 1
1005:  Tracer longname       : cloud amount
1006:  Tracer is_prognostic :  T
1007:  ---------------------------------------------------
1008: Number of tracers in field table for atmospheric model =    9
1009: Number of tracers in field table for oceanic model =    0
1010: Number of tracers in field table for land model =    0
1011: Number of tracers in field table for ice model =    0
1012: Number of tracers in field table for coupler model =    0
```

```
1013:
1014: ================================================================================
      ===
1015: fvGFS/ATMOSPHERE_MOD
1016: unknown
1017:
1018: ================================================================================
      ===
1019: EXTERNAL_IC_mod::get_nggps_ic
1020: unknown
1021:  &EXTERNAL_IC_NML
1022:  FILTERED_TERRAIN        = T,
1023:  LEVP    =          65,
1024:  GFS_DWINDS      = T,
1025:  CHECKER_TR      = F,
1026:  NT_CHECKER      =           0
1027:  /
1028:
1029: ================================================================================
      ===
1030: FV_DIAGNOSTICS_MOD
1031: unknown
1032:
1033: ================================================================================
      ===
1034: DIAG_GRID_MOD
1035: unknown
1036: ================================================================================
      ===
1037: v2018 FV3GFS BETA VERSION PHYSICS
1038:  &GFS_PHYSICS_NML
1039:  FHZERO  =   6.00000000000000     ,
1040:  LDIAG3D = F,
1041:  LSSAV   = F,
1042:  FHCYC   =   24.0000000000000     ,
1043:  THERMODYN_ID    =           1,
1044:  SFCPRESS_ID     =           1,
1045:  CPLFLX  = F,
1046:  CPLWAV  = F,
1047:  CPLCHM  = F,
1048:  LSIDEA  = F,
1049:  FHSWR   =   3600.00000000000     ,
1050:  FHLWR   =   3600.00000000000     ,
1051:  LEVR    =         -99,
1052:  NFXR    =          45,
1053:  AERO_IN = F,
1054:  IFLIP   =           1,
1055:  ISOL    =           2,
1056:  ICO2    =           2,
1057:  IALB    =           1,
1058:  ISOT    =           1,
1059:  IEMS    =           1,
1060:  IAER    =         111,
1061:  ICLIQ_SW        =           1,
1062:  IOVR_SW =           1,
1063:  IOVR_LW =           1,
1064:  ICTM    =           1,
```

```
 ISUBC_SW        =           2,
 ISUBC_LW        =           2,
 CRICK_PROOF     = F,
 CCNORM  = F,
 LWHTR   = T,
 SWHTR   = T,
 ICCN    = F,
 NCLD    =           5,
 IMP_PHYSICS     =          11,
 PSAUTCO =  8.000000000000000E-004,  5.000000000000000E-004,
 PRAUTCO = 2*1.500000000000000E-004  ,
 EVPCO   =  2.000000000000000E-005,
 WMINCO  = 2*1.000000000000000E-005  ,
 FPRCP   =           0,
 PDFFLAG =           4,
 MG_DCS  =   200.000000000000     ,
 MG_QCVAR        =   1.00000000000000     ,
 MG_TS_AUTO_ICE  = 2*180.000000000000        ,
 MG_RHMINI       =   1.01000000000000     ,
 EFFR_IN = T,
 TF      =   258.160000000000     ,
 TCR     =   273.160000000000     ,
 MICROP_UNIFORM  = T,
 DO_CLDICE       = T,
 HETFRZ_CLASSNUC = F,
 MG_DO_GRAUPEL   = T,
 MG_DO_HAIL      = F,
 MG_NCCONS       = F,
 MG_NICONS       = F,
 MG_NGCONS       = F,
 MG_NCNST        =   100000000.000000     ,
 MG_NINST        =   150000.000000000     ,
 MG_NGNST        =   100000.000000000     ,
 SED_SUPERSAT    = T,
 DO_SB_PHYSICS   = T,
 MG_ALF  =   1.00000000000000     ,
 MG_QCMIN        = 2*1.000000000000000E-009  ,
 MG_DO_ICE_GMAO  = F,
 MG_DO_LIQ_LIU   = T,
 LTAEROSOL       = F,
 LRADAR  = F,
 TTENDLIM        =  -999.000000000000     ,
 LGFDLMPRAD      = T,
 AVG_MAX_LENGTH  =   3600.00000000000     ,
 LSM     =           1,
 LSOIL   =           4,
 LSOIL_LSM       =          -1,
 LSNOW_LSM       =           3,
 NMTVR   =          14,
 IVEGSRC =           1,
 USE_UFO = T,
 IOPT_DVEG       =           4,
 IOPT_CRS        =           1,
 IOPT_BTR        =           1,
 IOPT_RUN        =           3,
 IOPT_SFC        =           1,
 IOPT_FRZ        =           1,
```

```
 IOPT_INF        =           1,
 IOPT_RAD        =           3,
 IOPT_ALB        =           2,
 IOPT_SNF        =           1,
 IOPT_TBOT       =           2,
 IOPT_STC        =           1,
 RAS     = F,
 TRANS_TRAC      = T,
 OLD_MONIN       = F,
 CNVGWD  = T,
 MSTRAT  = F,
 MOIST_ADJ       = F,
 CSCNV   = F,
 CAL_PRE = F,
 DO_AW   = F,
 DO_SHOC = F,
 SHOCAFTCNV      = F,
 SHOC_CLD        = F,
 OZ_PHYS = F,
 OZ_PHYS_2015    = T,
 DO_MYNNEDMF     = F,
 DO_MYNNSFCLAY   = F,
 BL_MYNN_CLOUDPDF        =           2,
 BL_MYNN_EDMF    =           0,
 BL_MYNN_EDMF_MOM        =           1,
 BL_MYNN_EDMF_TKE        =           0,
 BL_MYNN_EDMF_PART       =           0,
 BL_MYNN_CLOUDMIX        =           1,
 BL_MYNN_MIXQT   =           0,
 ICLOUD_BL       =           1,
 BL_MYNN_TKEADVECT       = F,
 GWD_OPT =           1,
 DO_MYJSFC       = F,
 DO_MYJPBL       = F,
 H2O_PHYS        = T,
 PDFCLD  = F,
 SHCNVCW = F,
 REDRAG  = T,
 HYBEDMF = T,
 SATMEDMF        = F,
 SHINHONG        = F,
 DO_YSU  = F,
 DSPHEAT = T,
 LHEATSTRG       = F,
 CNVCLD  = T,
 RANDOM_CLDS     = F,
 SHAL_CNV        = T,
 IMFSHALCNV      =           2,
 IMFDEEPCNV      =           2,
 ISATMEDMF       =           0,
 DO_DEEP = T,
 JCAP    =           1,
 CS_PARM =   8.00000000000000     ,   4.00000000000000     ,
      1000.00000000000     ,   3500.00000000000     ,   20.0000000000000     ,
      1.00000000000000     ,  -999.000000000000     ,   1.00000000000000     ,
      0.600000000000000     ,  0.000000000000000E+000,
 FLGMIN  =  0.180000000000000     ,  0.220000000000000     ,
```

```
1176:  CGWF    =  0.500000000000000     ,  5.000000000000000E-002,
1177:  CCWF    = 2*1.00000000000000        ,
1178:  CDMBGWD =   3.50000000000000     ,  0.250000000000000     ,
      2*1.00000000000000        ,
1179:  SUP     =   1.00000000000000     ,
1180:  CTEI_RM = 2*10.0000000000000        ,
1181:  CRTRH   = 3*0.900000000000000       ,
1182:  DLQF    = 2*0.000000000000000E+000  ,
1183:  RBCR    =  0.250000000000000     ,
1184:  SHOC_PARM       =   7000.00000000000     ,   1.00000000000000     ,
      4.28571430000000     ,  0.700000000000000     ,  -999.000000000000     ,
1185:  PSAURAS = 2*1.000000000000000E-003  ,
1186:  PRAURAS = 2*2.000000000000000E-003  ,
1187:  WMINRAS = 2*1.000000000000000E-005  ,
1188:  DO_SPPT = T,
1189:  DO_SHUM = T,
1190:  DO_SKEB = T,
1191:  DO_SFCPERTS     = F,
1192:  PRSLRD0 =  0.000000000000000E+000,
1193:  RAL_TS  =  0.000000000000000E+000,
1194:  LDIAG_UGWP      = F,
1195:  DO_UGWP = F,
1196:  DO_TOFD = F,
1197:  CLAM_DEEP       =  0.100000000000000     ,
1198:  C0S_DEEP        =  2.000000000000000E-003,
1199:  C1_DEEP =  2.000000000000000E-003,
1200:  BETAL_DEEP      =  5.000000000000000E-002,
1201:  BETAS_DEEP      =  5.000000000000000E-002,
1202:  EVFACT_DEEP     =  0.300000000000000     ,
1203:  EVFACTL_DEEP    =  0.300000000000000     ,
1204:  PGCON_DEEP      =  0.550000000000000     ,
1205:  ASOLFAC_DEEP    =  0.958000000000000     ,
1206:  CLAM_SHAL       =  0.300000000000000     ,
1207:  C0S_SHAL        =  2.000000000000000E-003,
1208:  C1_SHAL =  5.000000000000000E-004,
1209:  PGCON_SHAL      =  0.550000000000000     ,
1210:  ASOLFAC_SHAL    =  0.958000000000000     ,
1211:  NST_ANL = T,
1212:  LSEA    =           0,
1213:  NSTF_NAME       =           2,           1, 3*0,
1214:  FRAC_GRID       = F,
1215:  MIN_LAKEICE     =  0.150000000000000     ,
1216:  MIN_SEAICE      =  1.000000000000000E-006,
1217:  FRAC_GRID       = F,
1218:  SFC_Z0_TYPE     =           0,
1219:  XKZM_M  =   1.00000000000000     ,
1220:  XKZM_H  =   1.00000000000000     ,
1221:  XKZM_S  =   1.00000000000000     ,
1222:  XKZMINV =  0.300000000000000     ,
1223:  MONINQ_FAC      =   1.00000000000000     ,
1224:  DSPFAC  =   1.00000000000000     ,
1225:  BL_UPFR =  0.130000000000000     ,
1226:  BL_DNFR =  0.100000000000000     ,
1227:  NCA     =           1,
1228:  NCELLS  =           5,
1229:  NLIVES  =          10,
1230:  NFRACSEED       =  0.500000000000000     ,
```

```
1231:  NSEED   =      100000,
1232:  NTHRESH =  0.000000000000000E+000,
1233:  DO_CA   = F,
1234:  CA_SGS  = F,
1235:  CA_GLOBAL       = F,
1236:  ISEED_CA        =           0,
1237:  CA_SMOOTH       = F,
1238:  ISPPT_DEEP      = F,
1239:  NSPINUP =           1,
1240:  IAU_DELTHRS     =  0.000000000000000E+000,
1241:  IAUFHRS = 7*-1.00000000000000       ,
1242:  IAU_INC_FILES   =
1243:
1244:  IAU_FILTER_INCREMENTS   = F,
1245:  DEBUG   = F,
1246:  PRE_RAD = F,
1247:  MAX_LON =        5000,
1248:  MAX_LAT =        2000,
1249:  MIN_LON =         192,
1250:  MIN_LAT =          94,
1251:  RHCMAX  =  0.999999900000000     ,
1252:  PHYS_VERSION    = v2018 FV3GFS BETA VERSION PHYSICS
1253:  FSCAV_AERO      = default             default             default
1254:  /
1255:   ===================================================================
1256:  cires_ugwp_cires
1257:  &CIRES_UGWP_NML
1258:  KNOB_UGWP_SOLVER        =           1,
1259:  KNOB_UGWP_SOURCE        =           1,           0,           1,
```

```
1260:  KNOB_UGWP_WVSPEC        =           1, 3*32,
1261:  KNOB_UGWP_AZDIR =           2, 3*4,
1262:  KNOB_UGWP_STOCH = 4*0,
1263:  KNOB_UGWP_EFFAC = 4*1.00000000000000        ,
1264:  KNOB_UGWP_DOAXYZ        =           1,
1265:  KNOB_UGWP_DOHEAT        =           1,
1266:  KNOB_UGWP_DOKDIS        =           0,
1267:  KNOB_UGWP_NDX4LH        =           2,
1268:  KNOB_UGWP_VERSION       =           0,
1269:  LAUNCH_LEVEL    =          55
1270:  /
1271:   ================================================================
1272:  gfdl_cloud_microphys_mod
1273:  &GFDL_CLOUD_MICROPHYSICS_NML
1274:  MP_TIME =   150.000000000000     ,
1275:  T_MIN   =   178.000000000000     ,
1276:  T_SUB   =   184.000000000000     ,
1277:  TAU_R2G =   900.000000000000     ,
1278:  TAU_SMLT        =   900.000000000000     ,
1279:  TAU_G2R =   600.000000000000     ,
1280:  DW_LAND =  0.160000000000000     ,
1281:  DW_OCEAN        =  0.100000000000000     ,
1282:  VI_FAC  =   1.00000000000000     ,
1283:  VR_FAC  =   1.00000000000000     ,
1284:  VS_FAC  =   1.00000000000000     ,
1285:  VG_FAC  =   1.00000000000000     ,
1286:  QL_MLT  =  1.000000000000000E-003,
1287:  DO_QA   = T,
1288:  FIX_NEGATIVE    = T,
1289:  VI_MAX  =   1.00000000000000     ,
1290:  VS_MAX  =   2.00000000000000     ,
1291:  VG_MAX  =   12.0000000000000     ,
1292:  VR_MAX  =   12.0000000000000     ,
1293:  QS_MLT  =  1.000000000000000E-006,
1294:  QS0_CRT =  1.000000000000000E-003,
1295:  QI_GEN  =  1.820000000000000E-006,
1296:  QL0_MAX =  2.000000000000000E-003,
1297:  QI0_MAX =  1.000000000000000E-004,
1298:  QI0_CRT =  8.000000000000001E-005,
1299:  QR0_CRT =  1.000000000000000E-004,
1300:  FAST_SAT_ADJ    = T,
1301:  RH_INC  =  0.300000000000000     ,
1302:  RH_INS  =  0.300000000000000     ,
1303:  RH_INR  =  0.300000000000000     ,
1304:  CONST_VI        = F,
1305:  CONST_VS        = F,
1306:  CONST_VG        = F,
1307:  CONST_VR        = F,
1308:  USE_CCN = T,
1309:  RTHRESH =  1.000000000000000E-005,
1310:  CCN_L   =   300.000000000000     ,
1311:  CCN_O   =   100.000000000000     ,
1312:  QC_CRT  =  5.000000000000000E-008,
1313:  TAU_G2V =   900.000000000000     ,
1314:  TAU_V2G =   21600.0000000000     ,
1315:  SAT_ADJ0        =  0.900000000000000     ,
1316:  C_PIACR =   5.00000000000000     ,
```

```
1317:  TAU_IMLT        =   600.000000000000     ,
1318:  TAU_V2L =   150.000000000000     ,
1319:  TAU_L2V =   225.000000000000     ,
1320:  TAU_I2S =   1000.00000000000     ,
1321:  TAU_L2R =   900.000000000000     ,
1322:  QI_LIM  =   1.00000000000000     ,
1323:  QL_GEN  =  1.000000000000000E-003,
1324:  C_PAUT  =  0.500000000000000     ,
1325:  C_PSACI =  5.000000000000000E-002,
1326:  C_PGACS =  1.000000000000000E-002,
1327:  Z_SLOPE_LIQ     = T,
1328:  Z_SLOPE_ICE     = T,
1329:  PROG_CCN        = F,
1330:  C_CRACW =  0.800000000000000     ,
1331:  ALIN    =   842.000000000000     ,
1332:  CLIN    =   4.80000000000000     ,
1333:  TICE    =   273.160000000000     ,
1334:  RAD_SNOW        = T,
1335:  RAD_GRAUPEL     = T,
1336:  RAD_RAIN        = T,
1337:  CLD_MIN =  5.000000000000000E-002,
1338:  USE_PPM = F,
1339:  MONO_PROF       = T,
1340:  DO_SEDI_HEAT    = F,
1341:  SEDI_TRANSPORT  = T,
1342:  DO_SEDI_W       = F,
1343:  DE_ICE  = F,
1344:  ICLOUD_F        =           1,
1345:  IRAIN_F =           0,
1346:  MP_PRINT        = F,
1347:  REIFLAG =           1,
1348:  REWMIN  =   5.00000000000000     ,
1349:  REWMAX  =   10.0000000000000     ,
1350:  REIMIN  =   10.0000000000000     ,
1351:  REIMAX  =   150.000000000000     ,
1352:  RERMIN  =   10.0000000000000     ,
1353:  RERMAX  =   10000.0000000000     ,
1354:  RESMIN  =   150.000000000000     ,
1355:  RESMAX  =   10000.0000000000     ,
1356:  REGMIN  =   300.000000000000     ,
1357:  REGMAX  =   10000.0000000000     ,
1358:  TINTQS  = F
1359:  /
1360:
1361: ================================================================================
     ===
1362: $Id$
1363: $Name$
1364:  &ATMOS_MODEL_NML
1365:  BLOCKSIZE       =          32,
1366:  CHKSUM_DEBUG    = F,
1367:  DYCORE_ONLY     = F,
1368:  DEBUG   = F,
1369:  SYNC    = F,
1370:  FDIAG   =   1.00000000000000     , 4095*0.000000000000000E+000  ,
1371:  FHMAX   =   384.000000000000     ,
1372:  FHMAXHF =   120.000000000000     ,
```

```
1373:  FHOUT   =   3.00000000000000     ,
1374:  FHOUTHF =   1.00000000000000     ,
1375:  CCPP_SUITE      = FV3_GFS_v15p2


                                                    ,
1376:  AVG_MAX_LENGTH  =   3600.00000000000
1377:  /
1378:  &DATA_OVERRIDE_NML
1379:  DEBUG_DATA_OVERRIDE     = F,
1380:  GRID_CENTER_BUG = F
1381:  /
1382:
1383: ================================================================================
      ===
1384: HORIZ_INTERP_MOD
1385: unknown
1386:  &HORIZ_INTERP_NML
1387:  REPRODUCE_SIENA = F
1388:  /
1389:
1390: ================================================================================
      ===
1391: HORIZ_INTERP_CONSERVE_MOD
1392: unknown
1393:
1394: ================================================================================
      ===
1395: HORIZ_INTERP_BILINEAR_MOD
1396: unknown
1397:
1398: ================================================================================
      ===
1399: HORIZ_INTERP_BICUBIC_MOD
1400: unknown
1401:
1402: ================================================================================
      ===
1403: horiz_interp_spherical_mod
1404: unknown
1405:
1406: ================================================================================
      ===
1407: DATA_OVERRIDE_MOD
1408: unknown
1409:
1410: ================================================================================
      ===
1411: TIME_INTERP_EXTERNAL_MOD
1412: unknown
1413:  &TIME_INTERP_EXTERNAL_NML
1414:  NUM_IO_BUFFERS  =           2,
1415:  DEBUG_THIS_MODULE       = F,
1416:  MAX_FIELDS      =         100,
1417:  MAX_FILES       =          40
1418:  /
1419:
```

```
1420: ================================================================================
      ===
1421: TIME_INTERP_MOD
1422: unknown
1423:  &TIME_INTERP_NML
1424:  PERTHLIKE_BEHAVIOR      = F
1425:  /
1426:
```