

# Computational flow of dynamical core

In this section, calculations of dynamical component based on coding are summarized.

[module name(file name)]

## Overview of dynamical core

1. calculate dynamical term [DYNTRM(dterm.F)]
  - 1.1 calculate vorticity and divergence on wave space and get grid value. [G2W, W2G(xdsphe.F)]
  - 1.2 diagnose stream function and potential velocity [DYNTRM(dterm.F)]
  - 1.3 diagnose surface pressure advection, its tendency & vertical flow [PSDOT(dgdyn.F)]
  - 1.4 calculate factor for hydrostatic eq. & interpolation of temperature on Hybrid coord.  
[CFACT(dcfct.F)]
  - 1.5 calculate virtual temperature [VIRTMD(dvtmp.F)]
  - 1.6 calculate temperature advection [GRTADV(dgdyn.F)]
  - 1.7 calculate momentum advection [GRUADV(dgdyn.F)]
  - 1.8 spectral transform of tendency terms [G2W(xdsphe.F)]
2. Time integration of equation DYNSTP(dstep.F)
  - 2.1 calculate tracer transport [TRACEG(dtrcr.F)]
  - 2.2 time integration on wave space [TINTGR(dintg.F)]
  - 2.3 time integration of tracer terms [GTRACE(dtrcr.F)]
  - 2.4 time filter [DADVNC(dadvn.F)]
  - 2.5 get horizontal wind of grid value from wave space [W2G(xdsphe.F)]
  - 2.6 correction of pressure-level diffusion [CORDIF(ddifc.F)]
  - 2.7 correction of horizontal friction heating [CORFRC(ddifc.F)]