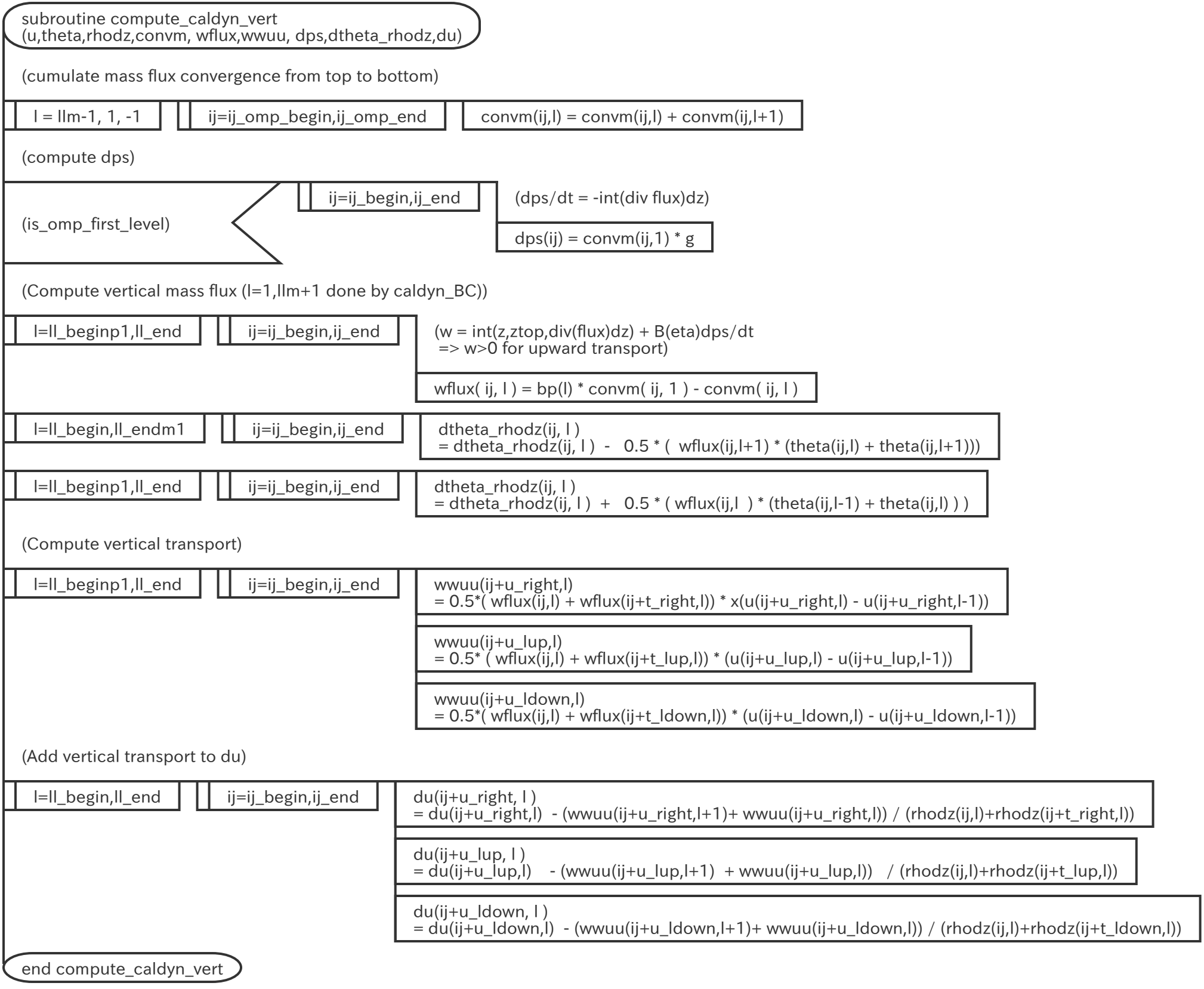
subroutine compute_caldyn_vert
(u,theta,rhodz,convm, wflux,wwuu, dps,dtheta_rhodz,du)
(cumulate mass flux convergence from top to bottom)
l = llm-1, 1, -1
ij=ij_omp_begin,ij_omp_end
convm(ij,l) = convm(ij,l) + convm(ij,l+1)
(compute dps)
(is_omp_first_level)
ij=ij_begin,ij_end
(dps/dt = -int(div flux)dz)
dps(ij) = convm(ij,1) * g
(Compute vertical mass flux (l=1,llm+1 done by caldyn_BC))
l=ll_beginp1,ll_end
ij=ij_begin,ij_end
(w = int(z,ztop,div(flux)dz) + B(eta)dps/dt
=> w>0 for upward transport)
wflux(ij, l) = bp(l) * convm(ij, 1) - convm(ij, l)
l=ll_begin,ll_endm1
ij=ij_begin,ij_end
dtheta_rhodz(ij, l)
= dtheta_rhodz(ij, l) - 0.5 * (wflux(ij,l+1) * (theta(ij,l) + theta(ij,l+1)))
l=ll_beginp1,ll_end
ij=ij_begin,ij_end
dtheta_rhodz(ij, l)
= dtheta_rhodz(ij, l) + 0.5 * (wflux(ij,l) * (theta(ij,l-1) + theta(ij,l)))
(Compute vertical transport)
l=ll_beginp1,ll_end
ij=ij_begin,ij_end
wwuu(ij+u_right,l)
= 0.5*(wflux(ij,l) + wflux(ij+t_right,l)) * x(u(ij+u_right,l) - u(ij+u_right,l-1))
wwuu(ij+u_lup,l)
= 0.5* (wflux(ij,l) + wflux(ij+t_lup,l)) * (u(ij+u_lup,l) - u(ij+u_lup,l-1))
wwuu(ij+u_ldown,l)
= 0.5*(wflux(ij,l) + wflux(ij+t_ldown,l)) * (u(ij+u_ldown,l) - u(ij+u_ldown,l-1))
(Add vertical transport to du)
l=ll_begin,ll_end
ij=ij_begin,ij_end
du(ij+u_right, l)
= du(ij+u_right,l) - (wwuu(ij+u_right,l+1)+ wwuu(ij+u_right,l)) / (rhodz(ij,l)+rhodz(ij+t_right,l))
du(ij+u_lup, l)
= du(ij+u_lup,l) - (wwuu(ij+u_lup,l+1) + wwuu(ij+u_lup,l)) / (rhodz(ij,l)+rhodz(ij+t_lup,l))
du(ij+u_ldown, l)
= du(ij+u_ldown,l) - (wwuu(ij+u_ldown,l+1)+ wwuu(ij+u_ldown,l)) / (rhodz(ij,l)+rhodz(ij+t_ldown,l))
end compute_caldyn_vert