```
subroutine meridional_advection
    Starts ratio exchange for ghost cells
    Compute zonal gradient on the interior
    Wait for end of communications
    Compute zonal gradient on the boundary

    Starts zonal gradient exchange for ghost cells
    Compute meridional gradient on the interior
    Wait for end of communications
    Compute meridional gradient on the boundary

    Starts meridional gradient exchange for ghost cells
    Compute meridional fluxes on the interior
    Wait for end of communications
    Compute meridional fluxes on the boundary

    Update all ratios
end subroutine
```

```
subroutine zonal_advection
    Starts ratio exchange for ghost cells
    Compute zonal gradient on the interior
    Wait for end of communications
    Compute zonal gradient on the boundary

    Starts zonal gradient exchange for ghost cells
    Compute zonal fluxes on the interior
    Wait for end of communications
    Compute zonal fluxes on the boundary

    Update all ratios
end subroutine
```