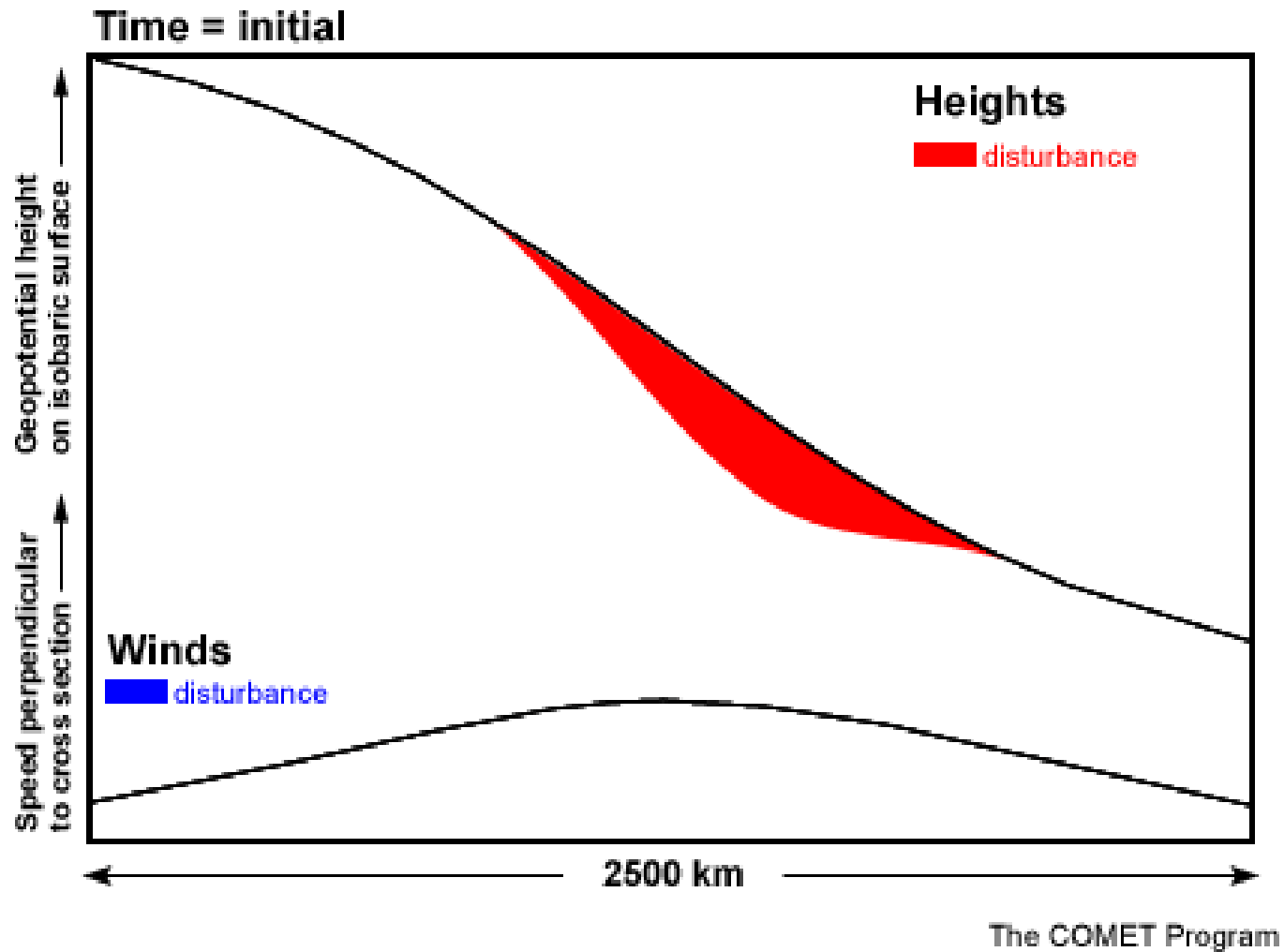
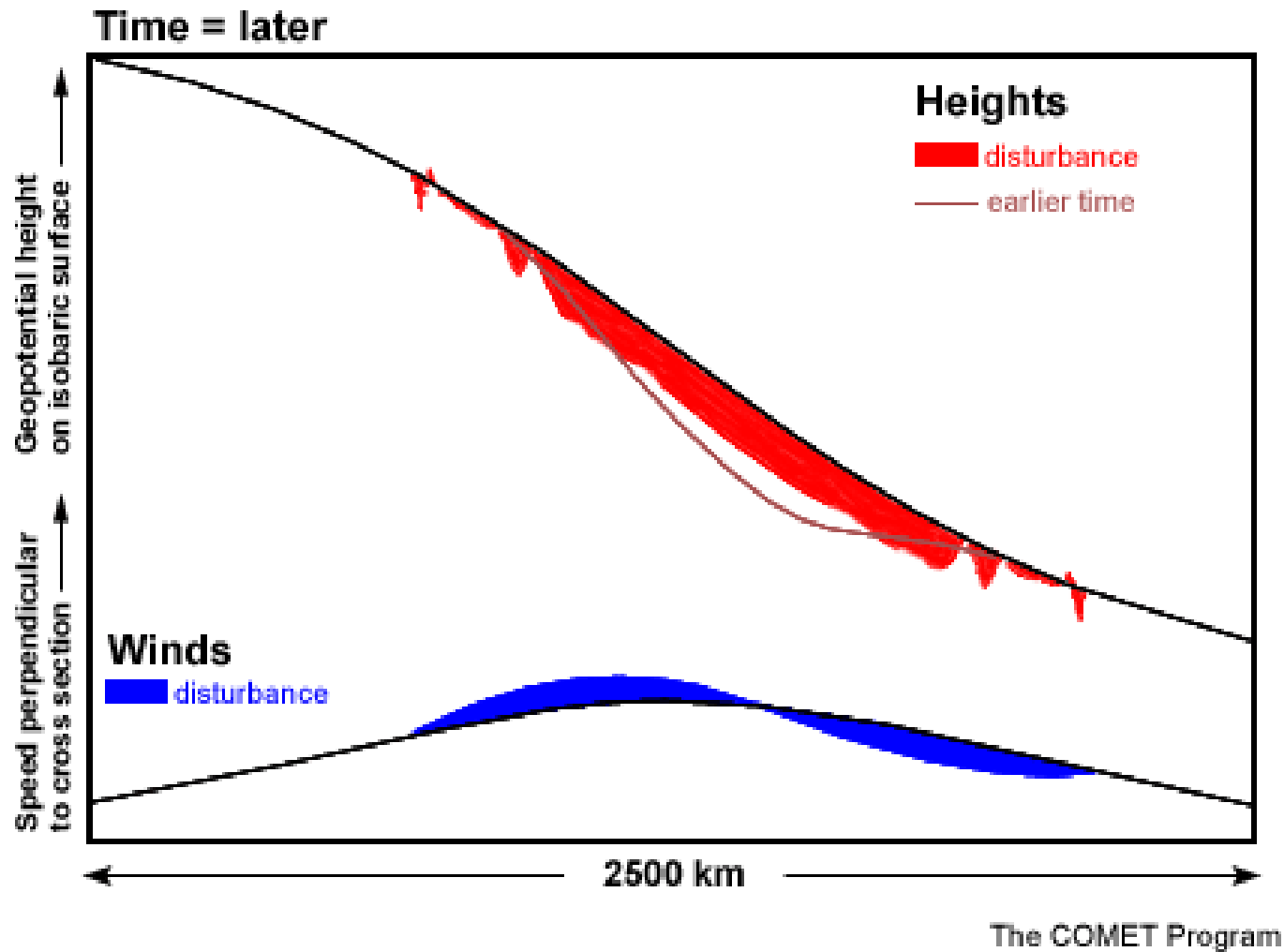


Geostrophic adjustment

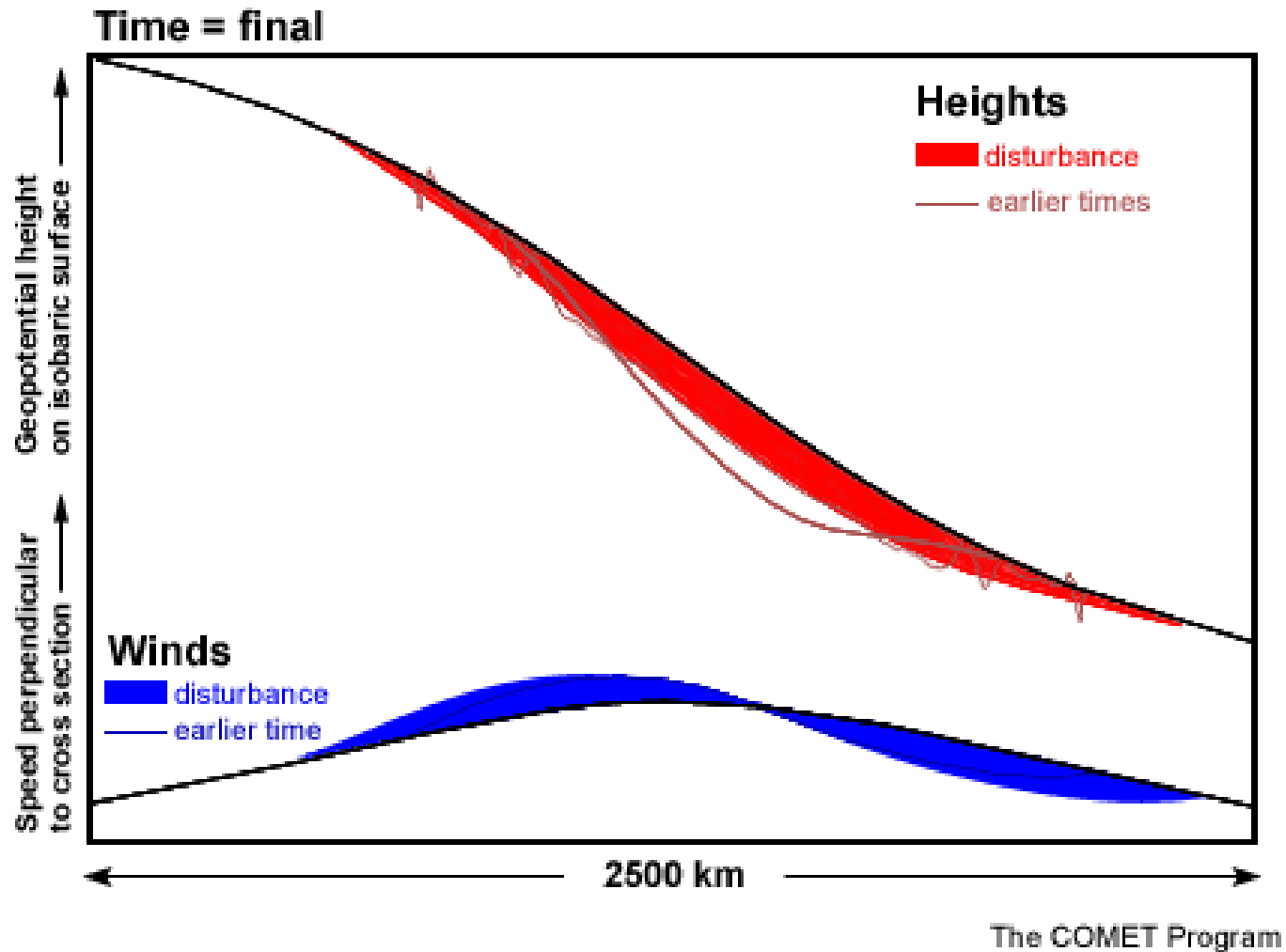
Geostrophic adjustment (1)



Geostrophic adjustment (2)

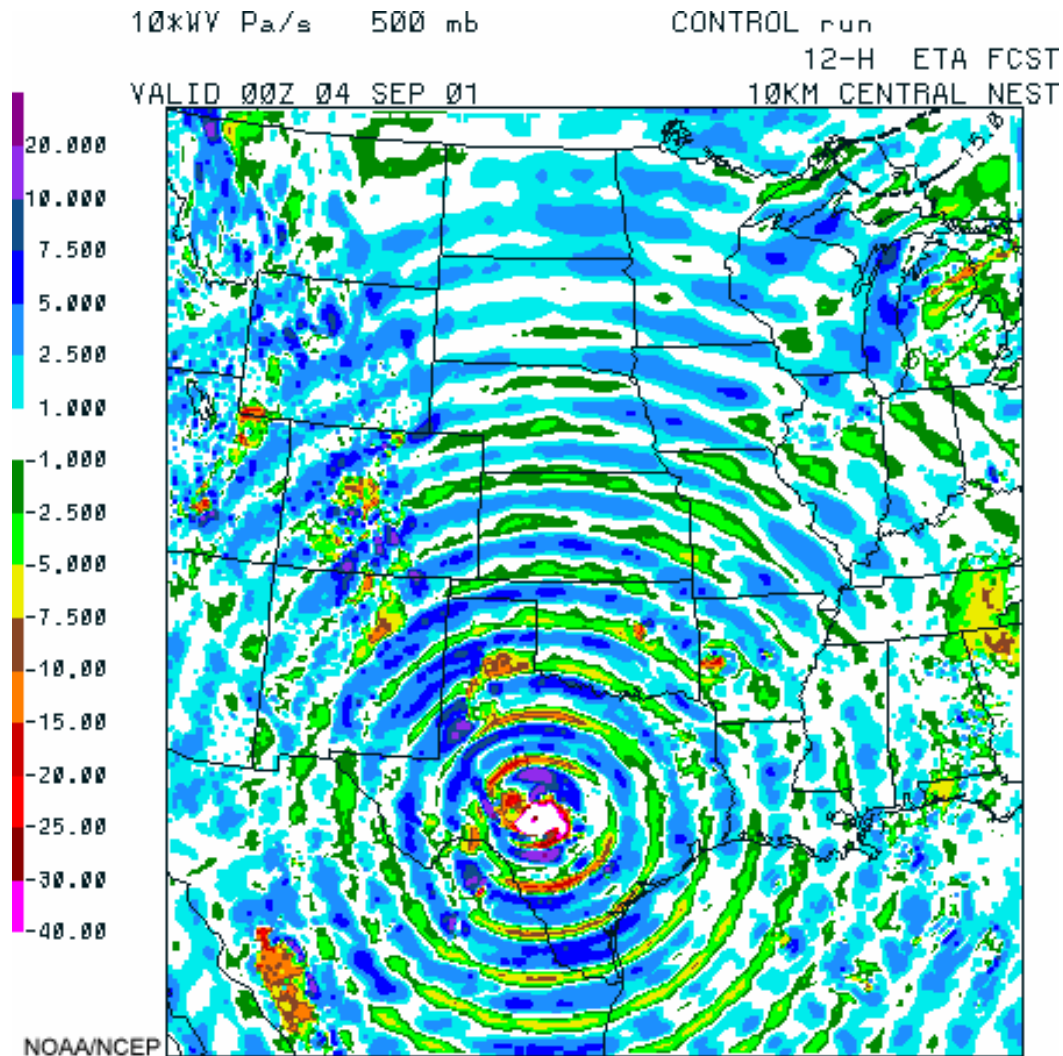


Geostrophic adjustment (3)



Inertia-gravity waves

“disturbance” is heating with condensation/latent heating



ETA model
(test)

Geostrophic adjustment

- Large scale state tends to wards balance geostrophic flow
- Flow must satisfy conservation of PV the entire time (thus defining a “path” to the steady state)
- Specifically, PV conservation offers a constraint on the way a steady state is reached.
- Balance reached by emission of interia-gravity waves
- A third of potential energy liberated converted to potential energy (rest radiated away by waves)
- Flow adjusts to disturbance larger than Rossby radius (otherwise, disturbance adjusts to flow)
- Fluid away from the disturbance ($x \gg \lambda_R$) does not feel the disturbance
- Important problem/issue for numerical simulations (prediction, initialization, generation of waves)