

Highlights, Wednesday, May 11

- We started the class by revisiting advection-diffusion equation with a special focus on how our choices of mesh sizes/grid spacing has an affect the stability of the solution.
- Essentially, for the numerical scheme to work we need to balance the diffusion coming backward with the advection coming forward.
- This can be achieved by bringing the Peclet number closer to 1, which can be achieved by reducing the node spacing.
- We then derived linear equation for glacier mass balance equation by treating it as a standard transient advection (basal sliding)-diffusion (internal deformation) equation with mass balance terms acting as sources.
- We played with code for the growth of the ice-cap in 1D and 2D using the finite volume expression derived earlier in class.