

- We started the class with discussions on the influence of node spacings (equal spacing, unequal spacing but concentrated on the left boundary vs right boundary) on the result of finite volume and finite elements solutions of the 1-D heat diffusion equation.
- We discussed transfer functions in diffusion equations. In simplest definitions, transfer functions are functions in the Fourier domain which when multiplied with a wave equation for a certain time increment gives the value of the equation at that time increment.
- We discussed the influence of time-stepping on the transfer function, and observed that the transfer function performs the best (most stable, no oscillation) for an implicit time step assumption.
- We discussed Reynolds and Rayleigh numbers for a change as we discussed the utility of dimensionless quantities.
- We ended the class discussing how we can extend this to include advection term in the simple diffusion equation.