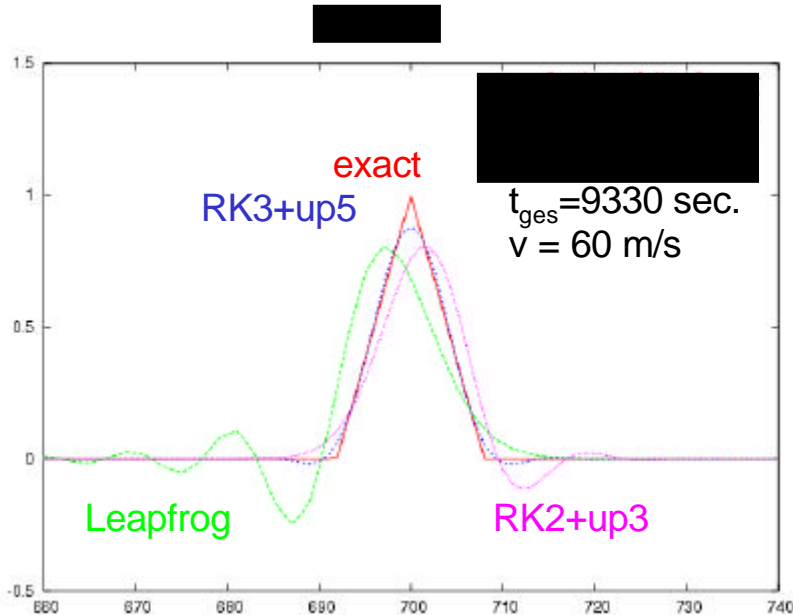


Horizontal advection in time splitting schemes

- Leapfrog + centered diff. 2. order (currently used LM/LME) ($C < 1$)
 - Runge-Kutta 2. order $O(\Delta t^2)$ + upwind 3. order $O(\Delta x^3)$ ($C < 0.87$)
 - Runge-Kutta 3. order $O(\Delta t^3)$ + upwind 5. order $O(\Delta x^5)$ ($C < 1.43$)
- (Wicker, Skamarock, 2002)



advection equation

$$\frac{\partial f}{\partial t} + v \frac{\partial f}{\partial x} = 0$$

Courant number $C = v * \Delta t / \Delta x$