Computational Fluid Dynamics (AE/ME 339)
MAE Dept., UMR

Home Work Problem 4

Following the procedure used in class using the von Neumann stability analysis for the explicit method, determine the stability criterion for the following methods used for numerically solving the one-dimensional parabolic equation.

$$\frac{\partial T}{\partial \tau} = \frac{\partial^2 T}{\partial \xi^2}$$

1. fully implicit method
2. Crank-Nicolson method