Title: Adaptive mesh solutions of nonlinear hyperbolic equations

Ref: Adaptive

Type: Individual

Vacancy: 1 Student

Duration: 1 Semester

Project Description:

During solution of nonlinear hyperbolic equations discontinuities in the solution, similar to the shock waves in fluid mechanics, may be encountered. Such discontinuities require very fine mesh spacing for accurate resolution. In this project an adaptive meshing technique, which will track such discontinuities and refine the mesh when necessary, will be used for the solution of Burger's equation.

Work Description:

1. Literature Survey
2. Developing a computer program for numerical solutions
3. Implementing an adaptive mesh algorithm
4. Reporting the results.

Qualifications ans Skills:

1. basic knowledge computational fluid dynamics
2. computer programming skills
3. clear report writing skills