PhD Course: Numerical Methods for PDEs

Simone Fagioli

The aim of the course is to give an introduction on the main numerical methods for PDEs. We will focus mainly on the Finite Volume Methods (main properties, Riemann solvers, higher order reconstruction, ENO and WENO reconstruction, central schemes). An overview on Finite Element and Deterministic Particles methods will be also given.

The course will be composed of 6/7 lectures starting from April 5th. For more informations about schedule and place please contact the lecturer at simone.fagioli@univaq.it.

References

1. A. Quarteroni, A. Valli: Numerical Approximation of Partial Differential Equations. Springer Series in Computational Mathematics;
2. G. Russo: High order shock capturing schemes for balance laws, lecture notes.
3. E.F. Toro: Riemann Solvers and Numerical Methods for Fluid Dynamics. Springer.