

Intensive course on

LOCKING PHENOMENA IN COMPUTATIONAL MECHANICS

Prof. Carlo Lovadina

Department of Mathematics, University of Pavia

ABSTRACT: This intensive course aims at illustrating some of the difficulties arising from the numerical treatment of constrained problems in Computational Mechanics. In particular, we will mainly focus on the following cases:

- (Nearly) incompressible elasticity problems;
- Thin elastic beams;
- Thin elastic plates.

We will consider typical Galerkin approximation of the above-mentioned problems, we will discuss the roots of the troubles in designing effective numerical schemes, and we will show possible cures.

The course does not require advanced mathematical knowledge, but a basic knowledge of Finite Element Methods is preferable.

TIMETABLE:

- **Tuesday, June 9th:** from **10.00 a.m.** to **12.00 a.m.**; from **1.00 p.m.** to **3.00 p.m.**
- **Wednesday, June 10th:** from **10.00 a.m.** to **12.00 a.m.**; from **1.00 p.m.** to **3.00 p.m.**
- **Thursday, June 11th:** from **10.00 a.m.** to **12.00 a.m.**; from **1.00 p.m.** to **3.00 p.m.**

All lectures will be given in **Aula MS1** at Dipartimento di Ing. Civile e Architettura, Università di Pavia.