NUMERICAL TOOLS FOR PHYSICAL MODELLING: FROM MATLAB TO COMSOL MULTIPHYSICS
8 hours Course

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COURSE AIMS:
Models can be very useful to interpret experimental results. Models rely on the solution of differential equations to predict the behavior of the systems of interest. However, in many cases the analytical solution of the problem is not available or cumbersome. As a consequence, numerical methods may prove very useful to find the solution. In this course we will introduce the basic features of Matlab and Comsol Multiphysics, two very useful instruments to handle numerical problems.
The course will be structured as follows:

- Introduction to the main features of Matlab, with some practical example for students (2h)
- Introduction on the solution of a very simple differential equation with finite differences (a numerical method). Implementation in Matlab. The students will be guided to develop the algorithm to tackle the differential equation (2h).
- Exercise session: the students will develop the code to solve the differential equation and they will discuss the results with the colleagues and with the teacher (2h).
- Introduction to Comsol Multiphysics. The main features of this software will be presented and the same differential equation solved previously with Matlab will be solved again with Comsol Multiphysics, but in a much faster way (2h).

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PhD Course

31st May and 1st June 2022
10:30-12:30 and 14:30-16:30
Aula 29
Via Garzetta 48, Brescia

Click here to join on Teams

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