



SC

**PHYS2150 Méthodes de simulation numériques de la physique**

[15h+22.5h exercises] 3 credits

**Teacher(s):** Eric Deleersnijder, Bernard Piraux  
**Language:** french  
**Level:** 2nd cycle course

**Aims**

To offer to students the possibility to acquire a first experience in numerical simulation in the problems belonging to the physical sciences field. Since they must acquire experience, emphasis is put on computer exercises, that allow the confrontation to multiples problems brought up by the installation of a numerical simulation software and the necessity to completely resolve the problem - meaning without limiting oneself to throwing the bases of resolutions. The study of different methods of numerical simulation is mainly through several examples coming from diverse domains of physics.

**Main themes**

Initiation to numerical simulation in physics through two types of problems:

1. Differential equation resolution to partial derivatives by the method of finite differences or with the help of spectral methods ;
2. The numerical simulations of the Monte Carlo type.

**Other credits in programs**

<b>PHYS21/T</b>	Première licence en sciences physiques (Physique de la terre, de l'espace et du climat)	(3 credits)	Mandatory
<b>PHYS22/A</b>	Deuxième licence en sciences physiques (Physique appliquée)	(3 credits)	
<b>PHYS22/G</b>	Deuxième licence en sciences physiques	(3 credits)	