EPFL

PHYS-625   **Using Mathematica to analyse and model experimental data**

Stadelmann Pierre

Cursus	Sem.	Type
Advanced Manufacturing		Obl.
Photonics		Obl.
Physics		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Multiple
Workload	60h
Hours	**28**
Courses	14
Exercises	14
Number of positions	

Frequency

Every year

Remark

Next time: Spring (Block course)

Summary

To learn the basics of symbolic programming using Mathematica / To understand Mathematica expressions and their use / To be able to solve linear and non-linear differentials systems / To present graphically experimental or simulated results

Content

This course is aimed to PhD students who wish to learn the symbolic programming language "Mathematica" in order to model and analyze experimental results. It will give the necessary practice of Mathematica to start using it in real situations. The syntax of Mathematica expressions will be studied in details. The course is based on notebooks that are executed interactively on PC. Many examples and exercises will be fully explained. How to obtain solutions of linear or non-linear algebraic or differential systems will be shown with worked out exercises. The use of the graphical capabilities of Mathematica to present experimental or calculated results will be emphasized.