

Intense Laser Systems

5 DAYS (35H)

Ref. LSL-07en

OBJECTIVES

- Understand basic principles of intense laser systems
- Master theoretical models and relevant computer simulations
- At training's end, being able to design and correctly size an intense laser project

PUBLIC

- Users and designers of Intense laser systems
- Teachers, scholars and instructors
- Graduate students

TOPICS

- Intense laser system architecture
- Laser source (Oscillators)
- Amplification, beam handling and focusing
- Non Linear Optics: Frequency conversion and laser tunability
- Laser diagnostics and Beam management

METHODS AND EDUCATION TOOLS

- Theoretical background
- Practice and Lab
- Computation and simulations

TRAINING SESSION CHAIR

Pr Eric CORMIER - Bordeaux University

PROGRAMME

- Laser Architecture
 - Laser parameters
 - Which laser for a given application?
 - Complex systems
- Laser source (oscillators)
 - Principles
 - Laser materials and oscillating modes (temporal)
 - Cavity effects and pumping schemes, benefits of diode pumping scheme
- Amplification, beam handling and focusing
 - Amplification strategies and techniques
 - Constraints: gain management, thermal issues and pumping sources
 - Beam cleaning and smoothing, optical isolation
 - Focalisation
- Non Linear Optics: Frequency conversion and laser tunability
 - Non linear optics principles
 - Principle of widely tunable laser sources
 - Frequency doubling and frequency mixing
 - Non linear effects in beam propagation
 - Recent applications of NLO
- Laser diagnostics and beam management
 - Spatio-temporal metrology
 - Spatio-temporal control
- Labs
- Simulations and codes

METHODS AND EDUCATION TOOLS

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+ D'INFOS

- Venue : IOA Talence
- Dates : contact us
- Registration fee : 2 600€ HT