TRAINING SCHOOL on
ULTRAFAST AND INTENSE LASER METROLOGY

Objectives
- Master laser field representation
- Understand the many laser field parameters (energetic, spatial, temporal, spectral, spatio-temporal, …)
- Review up-to-date laser metrology techniques
- Train on common metrology techniques during hands on sessions
- Interact directly with the many industrial partners in charge with the trainings
- Build a network of users within the European community and exchange knowledge and how-to among the participants. Initiate collaborations.

Term
- Lectures: 2.5 days
- Hands on training: 2.5 days (18 limited places)

Prerequisites
- Degree in lasers and optics

Audience
- Users or designers of high intensity/high energy/high average power lasers
- Technicians, Engineers, Researchers
- Undergraduate and PhD students

Dates
- 4-8 December 2017

Venue
- PYLA/University of Bordeaux

Teachers
- Guillaume Beaugrand, Imagine Optic
- Eric Cormier, CELIA, Bordeaux University
- Helder Crespo, Porto University
- JC Delagnes, CELIA, Bordeaux University
- Charles Dumas, Gentec
- Baptiste Fabre, CELIA, Bordeaux University
- Nicolas Forget, Fastlite
- Antoine Jeandet, CEA
- Yann Mairese, CELIA, CNRS
- Patrick Mounaix, IMS, CNRS
- Stéphane Petit, CELIA, CNRS
- Fabien Quere, CEA
- Raphael Serra, Phasics

With the collaboration of:
- Fastlight
- Femtoeasy
- Gentec/Laser Components
- Imagine Optic
- Phasics
- Sphere
Program

Basic concepts:
- Ultrashort and intense laser sources
- Laser field representation
- Laser parameters
- Linear and non-linear optics

Measurement methods:
- Energy (Photodiode, pyroelectric, thermopile)
- Spectral (wavemeter, Fabry-Perot, monochromator, imaging spectrometer, FTIR, …)
- Temporal (Autocorrelation, FROG-type, SPIDER-type, D-Scan, Wizzler, CEP, …)
- Spatial (Knife-edge, CCD, …, M², Shack-Hartmann, multilateral interferometry, …)
- Spatio-temporal couplings (Termite, …)

Special cases:
- THz characterization
- XUV/attosecond pulse characterization

Lab work:
- Time-frequency duality (simulations)
- SNLO (simulations)
- Spatial propagation (simulations)
- Energy, power, intensity
- Spectral measurements (calibration, resolution)
- Temporal (Autoco, SPIDER, Wizzler, FROG, D-Scan, …)
- Spatial (Shack-Hatmann, multi-lateral shearing interferometry, Knife-edge, M²)
- Spatio-temporal (simulations)
- THz (characterization)

Registration fees

French VAT (20%) not included

<table>
<thead>
<tr>
<th></th>
<th>Lectures 2.5 days</th>
<th>Lectures + lab work* 5 days</th>
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<tr>
<td>Full price</td>
<td>800 €</td>
<td>2 200 €</td>
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<tr>
<td>Students &amp; PhD (-25%)</td>
<td>600 €</td>
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* Lab work is limited to 18 people (applications will be handled on a first-come first served basis). If more than 18 applications are received for the full session, an additional training session might be scheduled.

Training session chair

- Prof. Eric CORMIER, CELIA, Bordeaux University, PYLA
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Coordination

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