UltraFast Innovations

YOUR KEY to innovation and success.

Characterization instruments

Optics characterization

GOBI®

Characterization of chirped mirrors & dispersive optics

WHITE LIGHT INTERFEROMETER

- Spectral phase and Group Delay Dispersion (GDD) measurements (accuracy of ±5 fs^2)
- 250–2400 nm

GLACIER®

Characterization of highly reflective mirrors

CAVITY-RINGDOWN REFLECTOMETER AND LOSS METER

- Reflectivity up to 99.9995% (5–1000 ppm losses)
- Wavelengths (additional diode-based wavelengths can be added to all models):
  - GLACIER: 375–1550 nm
  - GLACIER-123: 355, 532 and 1064 nm
  - GLACIER-C: 450–2000 nm (supercontinuum laser source)

Pulse characterization

TUNDRA®

Characterization of laser pulse contrast

THIRD-ORDER AUTOCORRELATOR

- Up to 10^{14} dynamic range
- Up to 3.8 ns scan range
- Wavelengths: 800, 1030 nm (others upon request)

MADEIRA

Single-shot CEP measurements

PHASEMETER

- Input pulse duration: ≤4.5fs @750 nm central wavelength
- Wavelength: 500–1000 nm

XUV characterization

EVEREST

Soft X-ray/XUV/VUV characterization

SOFT X-RAY / XUV / VUV SPECTROGRAPH

- Modular, compact design
- Detector: X-ray CCD camera or MCP camera available
- Wavelength:
  - Soft X-ray: 1–17 nm (73–1240 eV)
  - XUV: 5–80 nm (15–248 eV)
  - VUV: 30–200 nm (6–41 eV)
  - All-in-1 possible: 1–200 nm (6–1240 eV)

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XUV attosecond science

Generation

NEPAL

HHG of XUV/soft X-ray radiation

XUV LIGHT SOURCE – ATTOSECOND BEAMLINE

- Up to 360 µW @3 kHz high-harmonic power
- Operating pressure: few mbar down to $<10^{-3}$ mbar. Base pressure $<10^{-7}$ mbar
- Quick and easy exchange of the gas jet target

CALDERA

Generation of MHz XUV radiation

ENHANCEMENT CAVITY

- Stable operation at repetition rates ≥10 MHz
- Average powers on the 100-kW level

SAVANNA

Pulse compression

HOLLOW-CORE FIBER COMPRESSOR

- Standard (capillary based)
  - Input pulse energy: 0.5–2 mJ @ ≤10 kHz
  - Compression factor: 5–6 x
- HP (stretched fiber, high-power)
  - Input pulse energy: few 10s mJ
  - Peak power: up to 400 GW. Average power: up to 100 W
  - Compression factor: 5–30 x
- Wavelength: 800, 1030 nm (others upon request)

Manipulation

K2

Pump-probe XUV/IR experiments

PULSE DELAY UNIT

- Temporal resolution: 3 as
- Scan range: 300 fs
- Includes a wavelength tailored 2-segment mirror

AURORA

Generation of circularly polarized light

XUV PHASE RETARDER

- Maximum ellipticity (P_c): up to 0.8
- Up to 40% transmission
- Spectral range: 10–35 eV or 40–85 eV

CAPELLA

Shaping and sub-cycle control of field waveform

LIGHT FIELD SYNTHESIZER

- Shortest available output pulse: 2 fs FWHM
- Stability: <50 mrad
- Temporal accuracy: 7 as
- Wavelength: 400–1000 nm