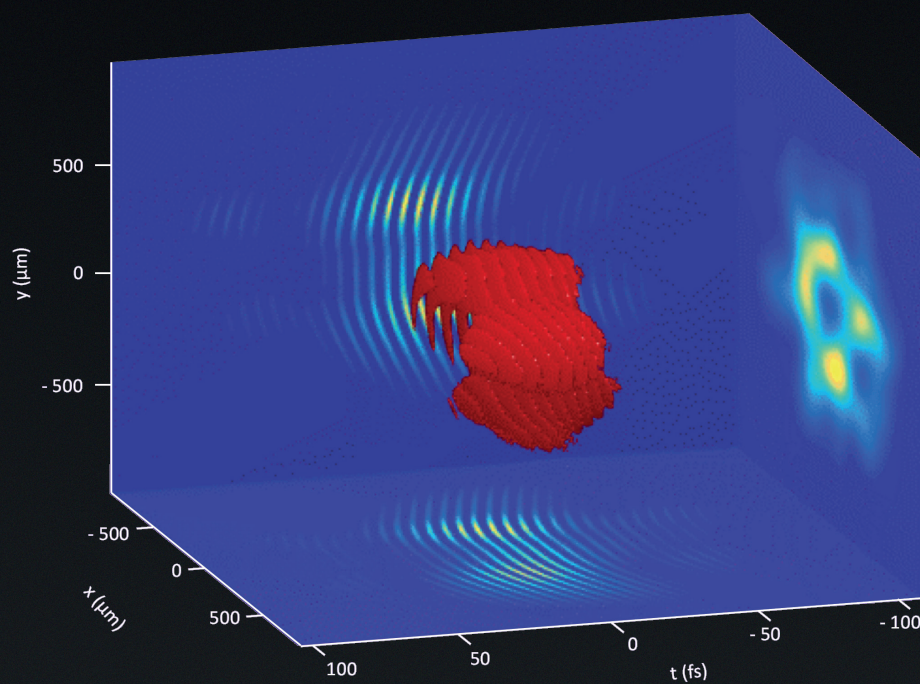


# Source LAB

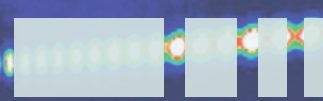
Laser Shaping & Metrology

## Insight

**Spatio-temporal metrology at focus of  
ultra-short laser pulses**







### Complete 3D metrology at focus for ultra-short lasers

Developed by the CEA and SourceLAB, the INSIGHT system is a breakthrough metrology sensor to be inserted at the attenuated focus of ultra-short laser systems.

It offers full access to the complex E field (amplitude and phase) in space-time/frequency, in the far-field and the near-field.

It is associated to state-of-the-art analysis algorithms to support the experimentalists in finding the good conditions for interaction.



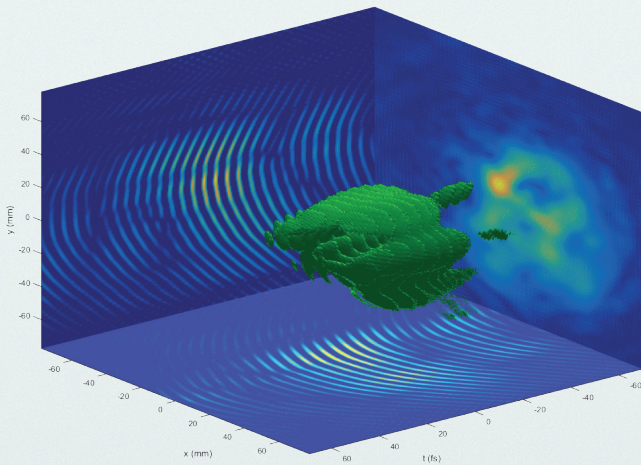
### KEY FEATURES

3D metrology of complex E-field at focus for ultra-short lasers

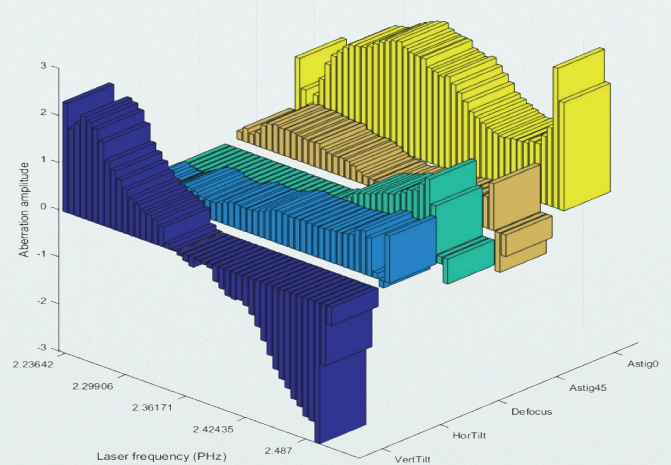
Complete “real-beam” input to 3D simulation codes

Access to comprehensive information on chromatic aberration through Zernike decomposition for each frequency

Fine measurements of intentionally introduced space-time couplings for advanced beam control (attosecond lighthouse, light springs, ...)



100 TW laser pulse reconstructed E field in space and time prior focusing



Zernike decomposition of the near-field spectrally-resolved spatial phase

### PERFORMANCES

- ▶ Very compact
- ▶ High spatial and spectral resolution
- ▶ Full software suite for acquisition and analysis
- ▶ Suitable for few-cycle laser pulses
- ▶ At focus, where the interaction takes place
- ▶ Suitable for ultra-intense lasers

Specifications			
Laser power	No limit (attenuated)	Pulse duration	4 fs- 250 fs (@800 nm)
Laser spectral range	400- 1000 nm	Spectral resolution	4 nm