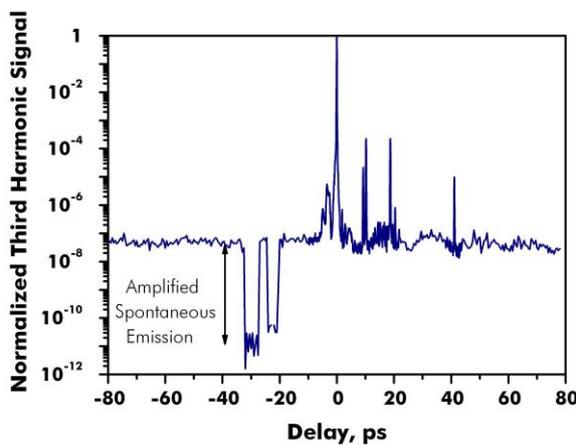
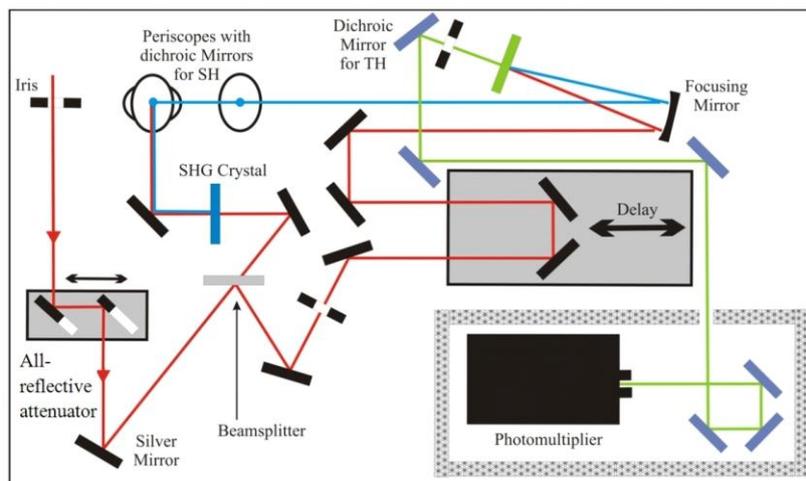


Ultra-high Contrast Third-order Autocorrelator TUNDRA

Our third-order autocorrelator serves as highly sensitive diagnostic tool for laser pulse contrast measurements. The dynamic range reaches 11 orders of magnitude and thus is sufficient for the most demanding applications. The autocorrelator generates the third harmonic sequentially in two nonlinear crystals and is set up in an all-reflective manner thereby guaranteeing correlation traces without measurement artifacts.

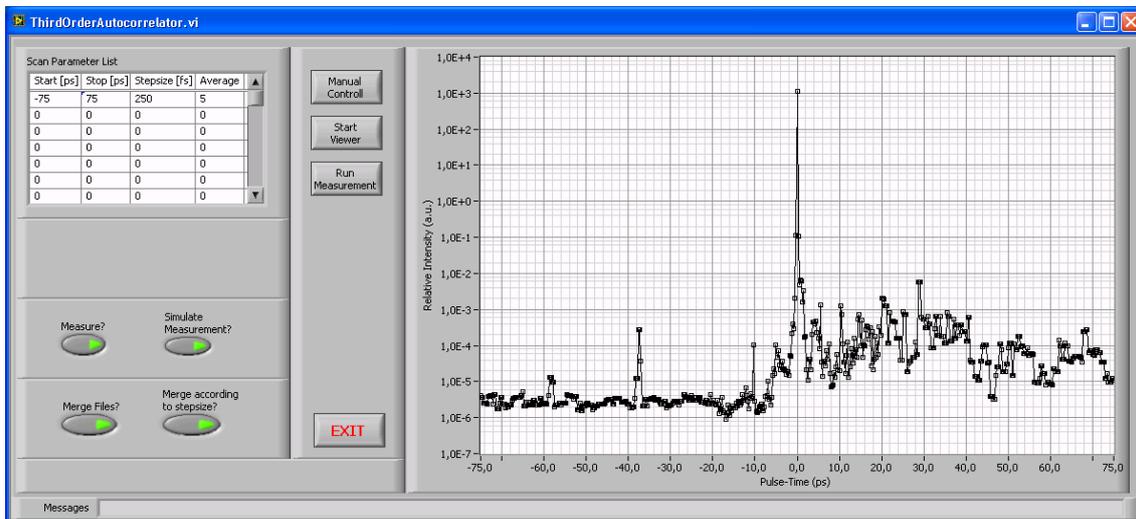


The high-sensitivity correlator can be employed in a wide range of applications. In particular, high-field experiments in plasma physics require the in-depth measurement of the temporal structure of the laser pulses.



In contrast to second-order autocorrelators, here the third-harmonic nature of the signal allows for distinguishing between pre- and postpulses. All these features make our specialized autocorrelator an invaluable tool for state-of-the-art characterization of ultrashort laser pulses.

The correlator is fully automatized and offers an integrated PC interface that allows for automated measurements, as well as manual control of the device, data analysis and data export.



Highlights:

- Up to 11 orders of magnitude signal dynamics with only 100 μ J pulse energy
- Scan range 650 ps, optionally up to 2 ns available
- User-selectable zero delay position for focusing on pre- or post-pulses
- Improved suppression of background by non-collinear sequential third harmonic generation and filtering measures
- Easy to set up and align
- Variable input laser beam attenuation
- Full software package allowing automatic scan of various positions at different resolutions
- Post-processing software for viewing and analyzing the autocorrelation traces
- Customizable according to user specifications

Characteristics:

- Signal dynamics: 11 orders of magnitude
- Pulse energy for full dynamic range: 50-100 μ J
- Delay range: 650 ps (2 ns optional)
- Spectral range: customizable in a wide range
- Resolution optical / translation stage: 50 fs / 1 fs
- Footprint: 35x50 cm^2

References:

- D. Herrmann et al. Optics Letters 34 2459-2461 (2009)
- J. Mikhailova et al. Optics Letters 36 3145-3147 (2011)
- Further customer references available upon request