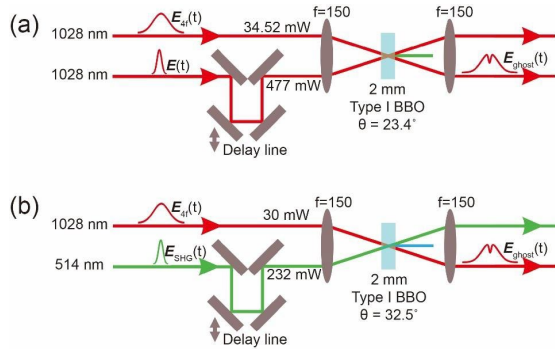
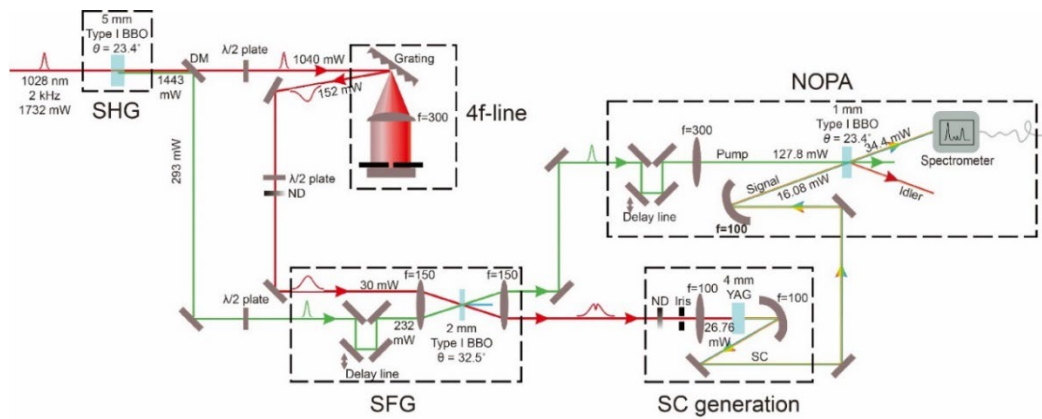


NOPA seeded with normal and ghost pulse generated SC:



Scheme of the ghost pulse creation by the SFG process: (a) SFG process between the carrier pulse and the original beam; (b) SFG process between carrier pulse and 514 nm pulse. The BBO crystal used in (a) is type I, 2 mm thickness, $\theta = 23.4^\circ$, while in (b) is type I, 2 mm thickness, $\theta = 32.5^\circ$. A delay line stage adjusts the temporal overlap of the two beams inside the BBO crystal.

Detailed scheme of the experimental setup using original beam ($\lambda_f=1028$ nm, red lines) and its second harmonic ($\lambda_{SHG}=514$ nm, green lines) for ghost pulse generation, SC generation (multicolor lines) with and without ghost pulses with carrier pulse at λ_f , and amplification in a NOPA by λ_{SHG} . The beam powers are measured and indicated. Half-wave plates are inserted before the 4f-line and the SFG process to adjust the beam polarization. In the SFG process, a type I BBO crystal is used. The delay lines adjust the temporal overlap of laser beams inside the BBO crystals. DM - dichroic mirror; ND - variable neutral density filter.



Left: Output spectra (below) of NOPA seeded by SC generated by the ghost pulse (a) and with normal SC (b). The SC generated by the ghost pulse shows reasonable intensities between 700 nm and 1000 nm, while the normal SC exhibits a sharp intensity drop around 750 nm to 900 nm. The arrows point to the original wavelength. A short pass filter cut longer wavelengths. Right: picture of the NOPA amplification after the BBO crystal.

