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Supercontinuum pulse compression

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Abstract content
   (Max 300 words)
Formatting &
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Using the supercontinuum (white light) output from of an all-normal dispersion photonic crystal fibre (PCF) provides the platform to create ultrashort pulses around the order of a few fs. Due to extreme dispersion of the pulse in the PCF, chirp compensation is required to create such an ultra short pulse. This is realised experimentally by having the white light propagate through a 4f-shaper setup combined with a computer controlled one dimensional spatial light modulator in order to determine the amplitude and phase of the pulse. To calculate the phase of the dispersed pulse we apply an iterative procedure called multiphoton intrapulse interference phase scan (also known as MIIPS). We can use the 1D SLM to correct for this pulse dispersion using the determined phase and in so doing compress our pulse to produce bandwidth limited output pulses. This presentation will focus on the experimental realisation of compressing the pulse using a 4f-shaper-1D SLM setup, specifically how the phase correction is applied to our stretched pulses. White light generation and the MIIPS procedure will be briefly discussed in order to provide a general understanding of this pulse compressor.

Apply to be
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MSc

Main supervisor (name and email)
and his / her institution

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