

Abstract Submitted  
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**Adaptive Control of the Spatial Position of White Light Filaments in an Aqueous Solution** ROBERT LEVIS, Temple University, GEORGE HECK, Temple University, JOSEPH SLOSS, Temple University — White light filamentation produced from intense laser beams represents a method to produce highly nonlinear energy deposition both spatially and temporally in the gas, liquid, or solid phase. We have demonstrated control over the spatial coordinates (position and extent) of white light filaments (supercontinuum generation) in an aqueous solution using shaped ultrafast, strong field laser pulses. These are the first experiments to achieve control of filament position through the manipulation of the spectral phase of an ultra-fast (50 fs) 800nm excitation laser pulse. A closed feedback loop employing a spatial light modulator and a genetic algorithm was used to manipulate the spectral phase of the pulses to achieve a specified filament position and length.

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