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Creating an extreme ultraviolet continuum from sub 10 femtosecond pulses using a polarization gate.

The birefringent nature of some materials has allowed excellent control of the polarization of laser pulses. The polarization gate uses two birefringent plates to shorten sub 10 fs pulses created by a hollow core fiber to ~ 1.3 fs. This is on the order of one half of a cycle of the lasers field. Through the use of the polarization gating technique, we have observed the spectrum of a high order harmonic continuum spanning roughly 25 eV. This corresponds to an estimated 200 attosecond pulse.

This work was done by Shambhu Ghimire, Bing Shan, Zenghu Chang and other members of the KLS group in the JRM Lab at KSU.