

POWER SCALING OF VUV AND XUV FREQUENCY COMBS

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By coupling a train of low-phase-noise, ultrashort pulses to a femtosecond enhancement cavity, it is possible to obtain a large enhancement of the pulse energy and subsequently drive the high harmonic generation process at ≥ 100 MHz repetition rates. At these repetition frequencies, the generated VUV-XUV frequency combs could potentially be used for a multitude of experiments requiring short wavelength radiation with exceptional temporal coherence and/or high average photon flux. We will present recent progress, including power scaling of the driving field with a corresponding factor of ~ 10 improvement in harmonic power over previous results, as well as initial coherence tests of the generated VUV frequency comb.