393. Title:Ultrafast broadband terahertz waveform measurement utilizing ultraviolet plasma photoemission
Authors:Liu, Jingle (1); Dai, Jianming (1); Zhang, X.-C. (1)
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Abstract:This paper reviews the recent progress in the development of ultrafast broadband

terahertz waveform measurement utilizing ultraviolet photoemission from laser-induced gases. We present the theoretical study and experimental investigation on ultrafast dynamics of terahertz-enhanced photoemission in various gas species. By using two-color laser field to coherently control the electron drift velocity and subsequent terahertz-enhanced photoemission, we develop an "all-optical" broadband terahertz waveform measurement method, which, by encoding terahertz pulse information into plasma photoemission, is capable of remote operation due to the minimized water vapor attenuation and unlimited optical signal collection. Broadband terahertz waveform measurement at a distance of 10m is demonstrated.