# Ionization-Induced Multiwave Mixing: Optimizing the Generation of Pulses from Mid-IR to XUV

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In this work we develop the theoretical model describing the characteristics of the generation of secondary radiation in plasma created by intense femtosecond laser pulses consisting of two or more quasi-monochromatic components. With the use of semiclassical approach we find the dependences of the amplitudes of the spectral components of the generated free-electron currents on the parameters of the ionizing pulses (frequencies, phases, amplitudes, durations and polarizations of quasi-monochromatic components). We find the parameters of these ionizing fields which are optimal for generation of secondary radiation in the infrared and ultraviolet ranges. We also discuss the possibility of obtaining ultrashort pulses in these frequency ranges with the use of the proposed mechanism. The work was supported by the Russian Science Foundation (Grant No. 21-72-00034).