Title:	Astro Ltd., find out more PAPER Controlling high harmonic generation using inhomogeneous two-color driving laser pulse
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Abstract:	High harmonic generation (HHG) is strongly modified near plasmonic nanostructures due to confinement and inhomogeneity of the electromagnetic field. Previous studies have revealed low-intensity generation of HHG and extension of the plateau; however, the roles of potential shape and a combination of inhomogeneous infrared (IR) and blue fields on HHG have not been studied. In this work, we study HHG driven by inhomogeneous two-color (800–400 nm) IR and blue femtosecond pulses by numerically solving the time-dependent Schrödinger equation. HHG spectra are computed for two different models: for a short-range potential, which supports a single-bound state, and for a long-range potential, which supports a Rydberg series, to show potential dependence on inhomogeneous two-color HHG. A substantial enhancement in the value of the cut-off resulting from inhomogeneity up to the ~600th order, extending beyond the water window, is found for both the models. The HHG spectra are highly sensitive to the relative phase of the two-color fields and this sensitivity increases with increasing inhomogeneity. Possibilities of efficiently generating and controlling attosecond pulse train and isolated attosecond pulse are discussed.
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