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Macroscopic High Harmonic Generation with Gouy and Gaussian Phase Distributions[1] BEJAN GHOMASHI, RAN REIFF, ANDREAS BECKER, University of Colorado, Boulder; JILA — We study the effects of the Gouy and Gaussian phase distributions on phase matching in macroscopic high harmonic generation (HHG) for different locations of a gas jet with respect to the focus of a laser pulse. The macroscopic HHG signal is computed by first interpolating results of *ab initio* simulations of the time-dependent Schrodinger equation at the microscopic level over both intensity and carrier envelope phase. Then, we approximate the macroscopic build-up assuming point-like field emitters. We develop several measures to qualitatively discuss the strength and width of the harmonic line and the relevance of off-harmonic radiation.

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