

Abstract Submitted  
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**Anisotropic Polarization Dependence of High Harmonic Generation in BaTiO<sub>3</sub>**<sup>1</sup> SHIMA GHOLAM MIRZAEIMOGHADAR, ERIN CRITES, JOHN BEETAR, University of Central Florida, AIPING CHEN, Center for Integrated Nanotechnologies, Los Alamos National Laboratory, MICHAEL CHINI, University of Central Florida — Following the first observation of high-order harmonic generation (HHG) from bulk ZnO at 2011, it has become clear that the properties of the solid can strongly influence the generated harmonics. For example, the generation of even harmonics has been investigated in non-centrosymmetric crystals, and anisotropy in the polarization states of emitted harmonics has been observed in both asymmetric and symmetric crystals. Here, we study mid-IR driven high harmonic generation from the ferroelectric crystal BaTiO<sub>3</sub>, for which external field control of the spontaneous polarization may allow control over the harmonic generation process. We observe anomalous behavior in both the yield and the polarization states of odd and even harmonics when rotating the input polarization relative to the crystal axes, potentially suggesting an important role of the crystal's Berry curvature on the HHG process.

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