

186. Title: Microscopic theory of the extremely nonlinear terahertz response of semiconductors

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Abstract: The extreme nonlinear terahertz response of initially unexcited intrinsic semiconductor nanostructures is studied theoretically by solving extended semiconductor Bloch equations numerically. The coupled dynamics of intraband acceleration and multiphoton interband transitions leads to high-harmonic generation up to several tens of the exciting terahertz frequency. It is shown that the actual cut-off frequency is determined by the band structure and not by the excitation strength.