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High harmonic generation in rare gas solids

DAVID REIS, Stanford PULSE Institute

There has recently been renewed interest in the interaction of strong optical fields with large band-gap solids. The response is known to involve the attosecond dynamics of the electrons and includes the generation of non-perturbative high-order harmonics. However, the detailed mechanism remain a matter of intense debate. Here we report on high harmonic generation in rare gas solids as compared to a dilute gas. The measured spectrum in the solid exhibits a secondary plateau and a subsequent high-energy cut-off that extends well beyond the gas phase, while the ellipticity dependence is similar to the gas phase and suggests importance of coherent single-site recombination.