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标题: Simulation of fluence-dependent photocurrent in terahertz photoconductive receivers
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摘要: A semi-classical Monte Carlo simulation of carrier dynamics in photoconductive detectors of terahertz (THz) radiation is presented. We have used this simulation to elucidate the importance of carrier trapping in the operation of photoconductive detectors. Simulations of the detection of single-cycle THz pulses by photoconductive antennas based on GaAs with trap densities between 2 x 10(17) and 2 x 10(18) cm(-3) are presented. We show that the high frequency (> 1 THz) spectral response of photoconductive devices decreases with increasing excitation fluence. Our simulations reveal that this effect is a direct consequence of the saturation of trapping centres
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