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标题: Terahertz coherent control of surface plasmon polariton propagation in subwavelength metallic hole arrays

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摘要: We demonstrate the terahertz coherent control of extraordinary transmission through subwavelength metallic hole arrays with double terahertz pulses. The interference of excitations of surface plasmon polaritons (SPPs) by two THz pulses sequence is employed to control the propagation of SPPs in the periodical structure. As a result, the THz wave transmission is controllable by adjusting the arriving time of the control THz pulse. Our results reveal that THz extraordinary transmission in subwavelength structure arises from the excitation of SPPs of the structures, which provides a universal ultrafast means to control the SPPs motion in various THz subwavelength structures. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4716022]

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