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Title:Relationship between phase and generation mechanisms of THz waves in InAs

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Abstract:We investigated the thickness-dependent characteristics of THz waves from InAs epilayers whose thickness ranges from 0.01 to 1.74 μm . The amplitude showed monotonic increments up to 0.9 μm , followed by a saturation at 1.74 μm . Interestingly, the phase of THz waves was reversed around absorption depth and used to identify the transient dipole direction based on simulated band diagram. We could further distinguish dominant THz wave generation mechanisms, associated with the phase information. \copyright 2011 Elsevier B.V. All rights reserved.

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