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**Observation of time-dependent PL intensity of excitonic transitions in III-V semiconductors** TODD KARIN, RUSSELL BARBOUR, PATRICK WILHELM, KAI-MEI FU, Department of Physics, Univ of Washington — We study the time dependence of the excitonic photoluminescence (PL) intensity under resonant and above-band excitation using pump-probe techniques in InP and GaAs. We find that the PL intensity of both free and bound excitons increases to a steady-state value on a microsecond time-scale upon optical excitation. The system recovers to its initial state on the time-scale of tens of microseconds in the absence of excitation. Understanding the mechanism of this time-dependent intensity is important for the interpretation of pump-probe measurements designed to measure the spin-relaxation time of bound carriers in III-V semiconductors.

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