

Abstract Submitted
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The quenching of scattering-enhanced tunneling in the Quantum Hall Regime KASEY RUSSELL, FEDERICO CAPASSO, VENKATESH NARAYANAMURTI, Harvard University, HONG LU, JOSHUA ZIDE, ARTHUR GOSSARD, UC Santa Barbara — Using capacitance-voltage spectroscopy, we are able to probe the magnetic field dependence of the quasi-bound state lifetime of a quantum well. Our measurements are done on a special InGaAs/InAlAs heterostructure that is designed to promote scattering-enhanced tunneling out of the quantum well. The bound state lifetime shows large oscillations as the magnetic field is varied, which result from the quenching of electron scattering as the Fermi level crosses a Landau Level. The results are interpreted in terms of the edge states and cyclotron orbitals of the Integer Quantum Hall Effect.

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