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Accession Number

12115361

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Title

Edge-induced magnetoplasmon excitation in a two-dimensional electron gas under quantum Hall conditions

Source

Physical Review B (Condensed Matter and Materials Physics), vol.84, no.3, 15 July 2011, 035311 (5 pp.). Publisher: American Physical Society, USA.

Abstract

The spectrally resolved terahertz photoconductivity between two separately contacted edge channels of a two-dimensional electron gas in the quantum Hall regime is investigated. We use a not-simply-connected sample geometry which is topologically equivalent to a Corbino disk. Due to the high sensitivity of our sample structure, a weak resonance situated on the high-energy side of the well known cyclotron resonance is revealed. The magnetic field as well as the carrier density dependence of this weak resonance, in comparison with different models, suggests that the additional resonance is an edge-induced magnetoplasmon. (29 References).