

Abstract Submitted
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Effect of in-plane magnetic field and strain to quantization in 2D topological insulator: application to InAs/GaSb Quantum Wells LUN-HUI HU, DONG-HUI XU, JINHUA SUN, YI ZHOU, FU-CHUN ZHANG, Department of Physics, Zhejiang University, Hangzhou, China — Motivated by the recent discovery of quantized spin Hall effect in InAs/GaSb quantum wells [1,2], we theoretically study the effects of in-plane magnetic field and strain effect to the quantization of charge conductance by using Landauer-Buttiker formalism. Our theory predicts a robustness of the conductance quantization against the magnetic field up to a very high field of 20 tesla. We use a disordered hopping term to model the strain and show that the strain may help the quantization of the conductance. Relevance to the experiments will be discussed.

[1] Donghui

Fu-Chun Zhang
The Univ of Hong Kong

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