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**Multifractality and Conformal Invariance at 2D Metal-Insulator Transition in the Spin-Orbit Symmetry Class** HIDEAKI OBUSE, RIKEN, Japan, ARVIND SUBRAMANIAM, University of Chicago, AKIRA FURUSAKI, RIKEN, Japan, ILYA GRUZBERG, University of Chicago, ANDREAS LUDWIG, University of California, Santa Barbara — We study the multifractality of critical wave functions at boundaries and corners at the Anderson metal-insulator transition for noninteracting electrons in the two-dimensional (2D) spin-orbit (symplectic) universality class. We find that the multifractal exponents near a boundary are different from those in the bulk. The exponents at a corner are found to be directly related to those at a straight boundary through a relation arising from conformal invariance. This provides direct numerical evidence for conformal invariance at the 2D spin-orbit metal-insulator transition. We also show that the presence of boundaries modifies the multifractality of the whole sample even in the thermodynamic limit.

Hideaki Obuse  
RIKEN, Japan

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