AWARD

JPSJ Papers of Editors' Choice

2023 年 3 月に物理学専攻博士前期課程を修了した岩田和之さん、物理学科を卒業した小柴彰斗さん（物性物理学教室）が日本物理学会欧文誌(Journal of The Physical Society of Japan) 2023 年 5 月号に論文を公表し、**Editors' Choice（注目論文）**に選出されました。

3 次元有機結晶で$\nu = 1$の量子ホール効果の検出、磁場効果による電子と正孔の仮想的なペアがもたらす特殊なホール伝導度の検出に取り組んだ研究内容です。

Journal of the Physical Society of Japan

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J. Phys. Soc. Jpn. 92, 053701 (2023) [5 Pages]

岩田和之さん

LETTERS

Editors' Choice

Observations of $\nu = 1$ Quantum Hall Effect and Inter-Band Effects of Magnetic Fields on Hall Conductivity in Organic Massless Dirac Fermion System α-$(BETS)_2I_3$ under Pressure

Abstract | Full Text | References (45)

Full text: PDF (eReader) / PDF (Download) (912 kB)

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We investigated the magnetoresistance and the Hall effect in an organic massless Dirac fermion system α-$(BETS)_2I_3$ under pressure. The Fermi energy of this system is slightly far away from the Dirac points, and thus the $\nu = 1$ quantum Hall state is realized in a low magnetic field at low temperatures. Moreover, the experimental formula for chemical potential as a function of temperature is clarified. We succeeded in detecting the inter-band effects of the magnetic field on the Hall conductivity when the chemical potential passes the Dirac points.