

Einladung zum Physikalischen Kolloquium

**Montag, 22.11.2010,
16.15 Uhr, H2 (025)**



Prof. Dr. Klaus von Klitzing

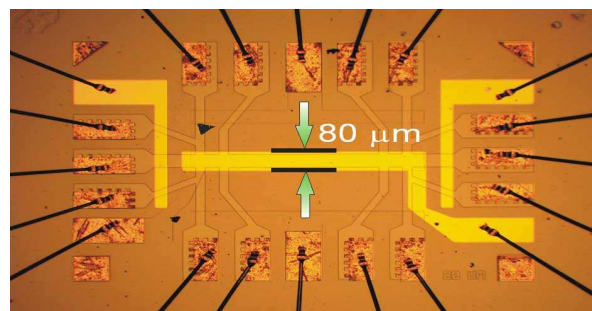
Max-Planck-Institut für Festkörperforschung Stuttgart

Physik - Nobelpreis 1985



30 Years Quantum Hall Effect - still a hot topic -

Basic research on the most important device in microelectronics, a silicon field effect transistor, led in 1980 to the discovery of the Quantum Hall Effect (QHE). Electrical measurements on such a device demonstrated, that a new type of electrical resistor can be realized, a resistor with a well defined value which depends exclusively on fundamental constants. Today, the word QHE is a synonym for the more general topic of electrons in strong magnetic fields or topological phenomena with connections not only to semiconductor physics but also to other research areas like astrophysics (edge states in gravity and black hole physics), high energy physics (quantum Hall quarks), new fields of solid state physics (topological quantum computation and topological insulator) and metrology (fundamental constants). This broad interest in QHE physics explains the high publication rate in this field of about one publication per day.



The talk starts with a historical review and will focus on two topics, the application of the QHE in connection with our international system of units (SI units) and some new developments in quantum Hall physics.

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Prof. Hecker Denschlag, Tel.:- 26100
Host: Prof. Kaiser, Tel.: - 22950**