

From Quantum Hall Effect to a New System of Units

Prof. Klaus von Klitzing
Nobel Laureate

**Max Planck Institute
for Solid-State Research, Germany**

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In 1980, Professor von Klitzing made the startling discovery that the low temperature Hall resistance of electrons in a semiconductor MOSFET is precisely quantized at discrete values, independent of sample parameters and imperfections. Von Klitzing was awarded the Nobel Prize in Physics in 1985 for his discovery of “the quantized Hall effect”.

His public lecture will address the issue of length measurement, which, together with time and mass measurement, is of fundamental importance to science and industry. He will begin with a historical survey of these units and finish with the most recent developments that take fundamental physical constants as the basis for defining measuring units independently from space and time. He will discuss how the quantum Hall effect can play a crucial role in the fundamental definition of the kilogram.

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