

How long is 1 Meter?

From ancient length units to modern concepts in metrology

Klaus v. Klitzing
Max Planck Institute for Solid State Research
Stuttgart / Germany

Length measurements are together with time and mass measurements of fundamental importance for trade, science and industrial developments. The presentation gives a survey about the development of these units, starting with an historical overview and finishing with the most recent developments where fundamental constants form the basis for units independent of space and time. For these modern aspects, the quantum Hall effect which represents basically a new type of electrical resistance plays a crucial role and may be even important for a new definition of the unit of mass, the kilogram.