



› Allgemeines Physikalisches Kolloquium

› Donnerstag, 26.04.2018 um 16 Uhr c.t.

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“The new International System of Units (SI)”

The frame of reference in which we "measure the world" is clear. We divide the time in seconds, the length in meters and the mass in kilograms. The International System of Units (SI) is supported by almost 100 states, making it a global success story. Now the SI gets a fundamental refresher so it can look forward to all the scientific and technical challenges of the 21st century. Natural constants such as the speed of light or the charge of the electron will give the units the best possible basis for definition.

In the revised SI all units are defined in terms of a set of seven reference constants, to be known as the "defining constants of the SI", namely the caesium hyperfine splitting frequency, the speed of light in vacuum, the Planck constant, the elementary charge, the Boltzmann constant, the Avogadro constant, and the luminous efficacy of a specified monochromatic source. This results in a simpler and more fundamental definition of the entire SI, and dispenses with the last of the definitions based on a material artefact – the international prototype of the kilogram.

The new SI will officially come into force on May 20, 2019 - the World Metrology Day, the anniversary of the Meter Convention.

In the presentation I will give an overview of the redefinition of the SI units and the consequences for the scientific community and society. Particular emphasis will be placed on the SI units second, meter and candela.