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The Quantum SI - physical fundamentals and adoption perspective

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[fundamental physical constants](#) [Planck constant](#) [the Quantum SI](#)

Abstract

Actual SI is based on selected equations of classical physics (defined as a description of physical phenomena which do not take into account a discontinuous nature of both matter and radiation). The essence of a proposed redefinition of the foundations of the SI, named „the New SI” or „the Quantum SI”, is making use of selected phenomena and equations of quantum physics. The principle of fixing the values of fundamental physical constants is similar to the idea of „natural units” used in theoretical physics. The latest measurements of Planck constant (published in 2014) open a possibility of the final acceptance of redefinition of the SI before the end of the present decade.

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