

REPORT OF ACTIVITIES

The CODATA Task Group on Fundamental Physical Constants is pleased to announce the public release of the 2010 Least Squares Adjustment of the values of the Fundamental Constants. The values of the 2010 Adjustment were posted on 2 June 2011 at the URL

<http://physics.nist.gov/cuu/Constants/index.html>

The extensive publication "CODATA recommended values of the fundamental physical constants: 2010" is now in preparation and is expected to be published in both the *Reviews of Modern Physics* and the *Journal of Physical and Chemistry Reference Data*. The CODATA recommended values are an internationally recognized resource, used by scientists around the world and from surprisingly diverse disciplines. The universal acceptance of the CODATA recommended values and their wide-spread use leads to improved consistency and transparency of all results using fundamental constant values. Not surprisingly, previous adjustment publications have been very heavily cited.

This recognition has in turn resulted in the decision to use the CODATA recommended values when the proposed redefinition of the International System of Units is implemented sometime in the future. This redefinition would relate the units of the measurement system to fixed fundamental constant values of the Planck constant, h , the elementary charge, e , the Boltzmann constant, k , the Avogadro constant, N_A and the speed of light, c .

The Task Group on Fundamental Physical Constants is an original Task Group of CODATA and was established in 1969. The purpose of the Task Group is "to periodically provide the scientific and technological communities with a self-consistent set of internationally recommended values of the basic constants and conversion factors of physics and chemistry based on all of the relevant data available at a given point in time."

This self-consistent set of values is obtained from a multivariate least squares adjustment (LSA) of all of the determinations of the values of the fundamental constants of nature. Our present policy is to produce a new LSA on a four year cycle. Each cycle includes all experimental data that are published or accepted by the Task Group by December 31 of that year.

Also available at the above URL are downloadable pdf copies of previous adjustments published in *Reviews of Modern Physics* and *Journal of Physical and Chemistry Reference Data*, as well as background information related to fundamental constants, an extensive bibliography of publications pertaining to fundamental constants, and links to other related sources of information.

The Task Group on Fundamental Physical Constants maintains working documents on BIPM website at <http://www.bipm.org/extra/codata/> and administrative documents on the CODATA website at <http://www.codata.org/taskgroups/TGfundconst/index.html>

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