

C2: Commission on Symbols, Units, Nomenclature, Atomic Masses and Fundamental Constants (SUNAMCO)

Activities for the period of October 2024 to October 2025

<https://iupap.org/who-we-are/internal-organization/commissions/c2-commission-on-symbols-units-nomenclature-at-omic-masses-and-fundamental-constants/>

Meetings and Routine

The Commission had two full meetings online in 2025 (Feb 4th and Jun 23rd). The officers have met online on many more occasions, mainly to discuss strategies for improvements in the communications between members. The general topics, concerning IUPAP or external communications concerning the Commission are promptly announced to all members by the secretary, and manifestations are stimulated.

Activities related to the JCGM and CCU

- C2 represents IUPAP to the Joint Committee for Guides to Metrology (JCGM), which convenes every year and is responsible for maintaining and promoting the Guide to the Expression of Uncertainty in Measurement (GUM) and the International Vocabulary of Metrology (VIM). The last meeting was on January 23rd, 2025, and IUPAP was represented by the C2 chair, Daniel Varela Magalhães.
- C2 represents IUPAP to the Consultative Committee for Units (CCU), which convenes every two years at the BIPM (International Bureau for Weights and Measures) and curates the SI Brochure (the authoritative guide to the SI), and otherwise as required. Several C2 members attend the CCU, including Richard Brown (CCU President), Eric Shirley (representing IUPAP), Sebastian Ulbricht and Martin Milton (also BIPM Director). The most recent meeting of the CCU was on April 2024, but two task groups continue to meet online:
Key Topics in the SI Brochure (TG-KTSIB) to report on progress at the next CCU meeting &
Core Metrological Terms (TG-CMT) to report progress to the CCU Working Group on Strategy and next CCU meeting.
- C2 has a representative who participates in activities of the Joint Committee for Guides to Metrology, Working Group 1 (JCGM-WG1), which curates the *Guide to the Expression of Uncertainty in Measurement*, (GUM: WG1 is assembling a suite of about 12 documents treating uncertainties known as “GUM”). The IUPAP C2 representative is Eric Shirley.
- Over the past year, C2 has on multiple occasions answered queries for its opinions on various matters, including queries from the CCU, JCGM-WG1 and JCGM-WG2.
- We are expecting an Associate Member of C2, Katy Klauenberg (PTB, Germany) to join JCGM-WG1.
- C2 has two representative who participates in activities of the Joint Committee for Guides to Metrology, Working Group 2 (JCGM-WG2), which curates the *Vocabulary for International Metrology*. The IUPAP C2 representative is Daniel Varela Magalhães.

Awards Nominations

- C2 is responsible for selecting recipients of two awards:
 - C2 Early Career Science Prize for contributions within the C2 ambit
 - C2 SUNAMCO Senior Scientist Medal for contributions within the C2 ambit
- C2 decided to request nominations for 2026, clarifying some points about the SUNAMCO Senior Scientist Medal

C2 interaction with Working Groups

During the first general meeting of C2 we had the opportunity to see a presentation from Stephan

Schlamminger, IUPAP WG13 Chair. After the presentation and discussions it was proposed that:

- Christian Rothleitner (PTB) take over as chair of IUPAP WG13, with Stephan Schlamminger helping as appropriate; that the planned review article on the measurement of G should be finished by the end of the year, with substantial progress by the 34 th IUPAP General Assembly; following this, an IUPAP WG13 meeting would be planned for 2026. This was sent in a more detailed plan to the IUPAP President.
- Integration between C2 and Working Group 19 (WG19) in advancing the process of establishing a new IUPAP Commission on Quantum Science and Technology (QST). After a meeting about the roadmapping of a QST Commission, with C2 representation of Daniel Varela Magalhães, a demand for endorsement from IUPAP commissions was placed. C2 members were consulted, embased with all the documents provided by Jaewook Ahn (that is assisting this effort). With no objection from the members, C2 provided a positive response for the creation of a QST commission.

SUNAMCO Redbook

C2 officers are engaged with the discussions about the SUNAMCO Redbook. The source tex files were recovered from Dr. Peter Mohr (NIST).

Officers and Members of the C2 Commission

Officers:

Daniel Varela Magalhães (Chair, Brazil)

Eric L. Shirley (Vice-Chair, USA)

Richard J.C. Brown (Secretary, UK)

Members:

Stephan Malbrunot-Ettenauer (Canada)

Yang Ji (China)

Erkki Ikonen (Finland)

Pierre Clade (France)

Sebastian Ulbricht (Germany)

Venu Gopal Achanta (India)

Enrico Massa (Italy)

Yukiko Shimizu (Japan)

Jae-Hyuk Choi (Korea)

Roger Groves (Netherlands)

Martin Milton (BIPM)