

**Report to the IUPAP Council & Commission Chairs meeting,
Rio de Janeiro, 21 – 22 October 2012,
from Commission C2 – SUNAMCO**

Commission on Symbols, Units, Nomenclature, Fundamental Constants and Atomic Masses

27 September 2012

Members: The Director of the BIPM is a full Member of C2 without national affiliation. At C2's meeting on 5 July 2012 it was affirmed that the Director is a Member *ex-officio*, not *ad hominem* – i.e. when the current Director, Michael Kuhne, retires and is replaced by the current Deputy Director, Martin Milton, on 1 January 2013 the latter should replace the former as a C2 Member. This has to be reconciled with IUPAP procedures on commission membership.

Supported Conferences: C2 supported one conference in 2012: the Conference on Precision Electromagnetic Measurement (CPEM 2012), Washington DC, USA, 1–6 July 2012.

Awards: Three IUPAP awards were presented during CPEM:

SUNAMCO Senior Scientist Medal:

Prof. Ian M. Mills

University of Reading, UK

“For his outstanding contribution to the development of the International System of Units towards the adoption of a system based on fundamental physical constants.”

Prof. Mills is current President of the Consultative Committee for Units.

IUPAP Young Scientist (Early Career) Prize in Fundamental Metrology

Dr. Pierre Cladé

Laboratoire Kastler Brossel,

Université Pierre et Marie Curie, Paris, France

“For his outstanding contribution to measurement of the fine structure constant.”

Dr. Ryan Ringle

National Superconducting Cyclotron Laboratory,

Michigan State University, East Lansing, MI, USA

“For his outstanding contribution to mass measurements of short-lived radioactive isotopes.”

Representation: Members or Associates of Commission C2 are appointed by IUPAP as representatives to other organizations. The organizations, corresponding appointments, and activities are:

1. **CODATA.** Former C2 Chair Peter Mohr (USA) is taking on the role of IUPAP liaison with CODATA, in addition to being a member of the CODATA Task Group on Fundamental Constants. Peter is also serving as IUPAP panel nominee for ICSU's review of CODATA's activities.

2. **IUPAC Commission of Isotope Abundances and Atomic Weights (CIAWW).** C2 Associate Member Kumar Sharma (Canada) has previously represented IUPAP at CIAWW. The current status of IUPAP representation to this Commission requires clarification. A proposal was made by the Chair of CIAWW to the previous C2 Chair, Peter Mohr, that CIAWW should be represented at SUNAMCO. I have yet to pursue this but I would expect any such arrangement to be reciprocal, noting the reciprocal arrangement that already exists between ICTNS and SUNAMCO, in the persons of Jeremy Frey and myself.
3. **Joint Committee on the Guides to Metrology (JCGM).** IUPAP is represented by Wolfgang Wöger (Germany), along with Clemens Elster (Germany) on WG1 – Guide to Uncertainty in Measurement and Savely Karshenboim (Russia) on WG2 – International Vocabulary of Metrology. See appendix for report on the JCGM meetin in June 2012.
4. **IUPAC Interdivisional Committee on Terminology, Nomenclature and Symbols (ICTNS).** C2 Chair Stephen Lea continues as IUPAP representative. ICTNS met 5–6 May 2012 in Lisbon, Portugal. Stephen Lea did not attend but a written report was submitted.
5. **Consultative Committee for Units (CCU)** of the International Bureau of Weights and Measures (BIPM). IUPAP is represented by C2 Member William Phillips (USA) and past C2 Chair Peter Mohr (USA). Other C2 Members and past Members are national representatives: Jörn Stenger (Germany); Jeff Flowers (UK).
6. **ISO TC-12/IEC TC-25** (Joint Technical Committee on Quantities and Units of the International Standards Organisation and the International Electrotechnical Commission). C2 Associate Member Savely Karshenboim represents IUPAP.

Meetings: The Commission met on Thursday 5 July 2012, as a satellite meeting to CPEM in Washington DC, USA. Five members and Associate Members were able to participate.

Red Book

Work continues on the informal project to update the SUNAMCO Red Book (IUPAP-25 “Symbols, Units, Nomenclature and Fundamental Constants in Physics”).

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Appendix – Report on JCGM activities (Wolfgang Woeger)

WG 1 (GUM): Both IUPAP representatives (C. Elster, W. Woeger) attended the meeting, 2012-06-12 to 2012-06-15. At present the work of WG 1 concentrates on the *revision of the GUM* of 1993 (or its version of 2008 - see BIPM website – containing minor amendments). The actual draft for the revised GUM (prepared by BIPM representative from NPL) must, however, be *harmonized* with the actual draft of document JCGM 105 (preliminary title: Concepts, principles, and methods for the evaluation, propagation, and interpretation of measurement uncertainty.) The draft of the latter document was initiated by the IUPAP representatives (from PTB) and was produced in close collaboration with the IEC representative who is with NIST. WG 1 decided for a *subgroup* of six members of WG 1 to accomplish the harmonization without avoidable delay by meeting, for instance, between the official meetings. Next meeting at BIPM: 2012-11-27.

WG 2 (VIM): Both IUPAP representatives (S. Karshenboim, W. Woeger) attended the meeting, 2012-06-20 to 2012-06-22. The original plan to start after publication of VIM 3 the preparation of VIM 4 (should appear in about 10 years containing ordinal and nominal properties), presently was put aside in favor of the establishment of a web-based Annotated VIM 3 that would provide commentary and rationale on several of the entries in the VIM 3. Such additional document seems to be necessary taking into account the result of a Survey on the third edition of the VIM. There were concerns expressed in several of the responses on the complexity and difficulty in understanding and using the VIM3. A draft will be prepared for the next meeting at BIPM, 2012-12-03.