

## CIPM Approves Lower Uncertainty on $R_{K-90}$

This note is meant to remind the CCEM of the action taken by the CIPM with respect to the declaration it made at its 22<sup>nd</sup> meeting in September 2000 about the uncertainty of  $R_{K-90}$  and to supplement the information in working document CCEM/2002-04.

In its 89<sup>th</sup> meeting on 19-20 October 2000, the CIPM approved the declaration of the CCEM lowering the relative uncertainty of  $R_{K-90}$  to 1 part in  $10^7$ . The following is a scanned image of p. 101 of the CIPM Procès-verbaux of that meeting.

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unit “uno = 1” for use with prefixes, to displace ppm and ppb, possible ways of redefining the kilogram, and the general responsibilities of the CCU and its members.

Prof. Kovalevsky thanked Prof. Mills for his report and invited discussion. Prof. Göbel and Dr Iizuka, Presidents of the CCEM and CCM, commented that it was far too early to discuss a new definition of the kilogram, but agreed that an exchange of views and a discussion of possible new definitions was appropriate. Dr Wallard agreed that links between the Consultative Committees should be encouraged and welcomed Prof. Mills’ suggestion to link the discussions of the CCU to the technical work of the CCM. Prof. Gopal and Dr Brown stressed the importance of any new definition being widely understandable, and Prof. Gopal noted that preparation of detailed instructions for the realization of the kilogram was a separate matter and that the *Mise en pratique* could be updated every few years. Dr Quinn agreed that the CIPM should advise the CCU to keep the definition simple.

### 6.2 Consultative Committee for Electricity and Magnetism

Prof. Göbel presented the report of the 22<sup>nd</sup> meeting of the Consultative Committee for Electricity and Magnetism (CCEM), held in September 2000 at the BIPM. He highlighted work being undertaken towards redefining the kilogram, and noted the recent CODATA adjustment of the fundamental constants. He presented a draft Recommendation based on the CCEM declaration concerning the uncertainty of the von Klitzing constant  $R_{K-90}$ . The CIPM agreed with the principle of the CCEM declaration but Dr Quinn observed that there remained a problem with the size of the uncertainty, and the Committee agreed that further discussion was necessary before the recommendation could be approved. Prof. Göbel had to leave the meeting before this discussion could be concluded. After the meeting it was agreed between Prof. Göbel and Dr Quinn that there was no need for a CIPM Recommendation; instead, the CIPM approval of the CCEM declaration was all that was required and this had been given.