CONSULTATIVE COMMITTEE FOR ELECTRICITY AND MAGNETISM (CCEM)

The CCEM fosters equivalence and promotes the **harmonization of electromagnetic measurements** within the SI. The CCEM plays a guiding and coordinating role in advances in electromagnetic metrology that take place at the NMIs and the BIPM.

In 2027, the CCEM will celebrate its 100th anniversary.

CCEM
Celebrating 100 years

IMPACT

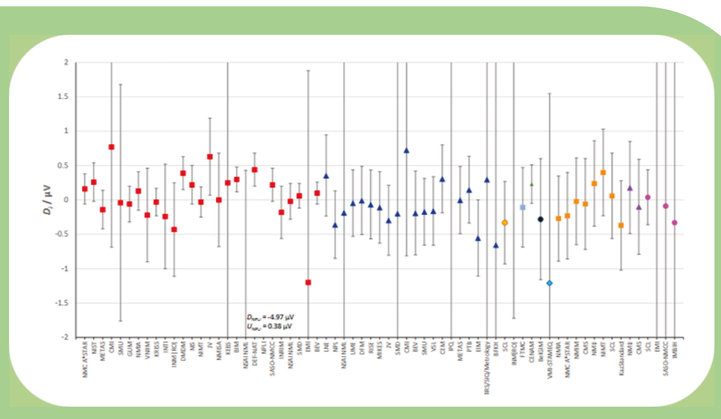
Confidence in electromagnetic measurement underpins technologies as varied as power grids, digital communications and high-frequency systems and it is the CCEM that helps build the confidence. Its international comparisons keep electromagnetic measurements accurate and comparable world-wide, supporting innovation, trade and global interoperability.

KEY ACHIEVEMENTS SINCE 2022

Promoting global comparability

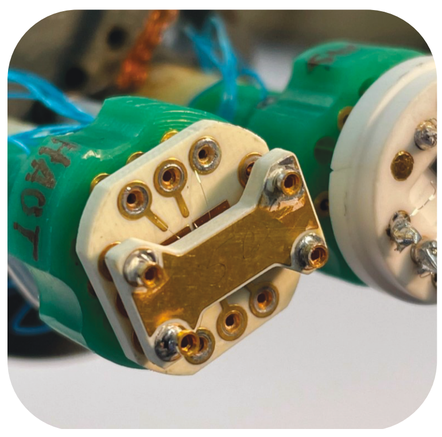
The CCEM leads the implementation of the **CIPM Mutual Recognition Arrangement (CIPM MRA)** in the field of Electricity and Magnetism.

It coordinated and reviewed **5 CCEM and 12 regional key comparisons** and managed CMC reviews in electricity and magnetism. Electricity and Magnetism is the second-largest area in terms of the number of CMC entries in the BIPM Key Comparison Database (KCDB). Therefore, efficient management of these activities is of strategic importance.



Comparisons of calibrations of Zener voltage standards at 10 V, organized by the BIPM (red) and the RMOs (blue, orange, violet)

Credit: BIPM



Credit: BIPM

Broadening the deployment of Quantum Standards

The CCEM played a guiding role in the introduction of a more practical **primary standard for resistance metrology.** This facilitates the use of low-cost, compact instrumentation, making it accessible for laboratories with limited resources.

Progressing electrical measurement science through webinars and workshops

The CCEM organizes a series of bi-annual webinars on topics of **electrical metrology** and held a workshop on metrology for **future electricity grids**, which was open to the whole metrology community.



Credit: Canva AI