

Kibble Balance Technical Meeting 2025

18-20 November 2025, BIPM, Sèvres

Day 1, Tuesday 18 November, starting at 9:00

- ☐ Welcome address and opening remarks
- ☐ Status reports, co-chaired by Hao Fang (BIPM) & Zhengkun Li (NIM)
KRISS, LNE, METAS, MSL, NIM

10:30 – 11:00 *Coffee break*

NIST, NPL, NRC, Tsinghua University, UME, BIPM

- ☐ Small mass, force and torque, chaired by Leon Chao (NIST)
 - Electronic NIST Torque Realizer, *Chandra Shahi (NIST)*
 - Development of Torque-Generating Machines Based on the Kibble Balance at NMIJ, *Misaki Hamaji / Naoki Kuramoto (NMIJ)*

13:00 – 14:00 *Lunch*

- Traceable 6DOF tactile force measurement sensor based on Kibble balance principle, *Georg Hein (TU Ilmenau)*
- Development of Small Force Measurement with EFB, *Yang Bai (NIM)*
- Electrostatic balance at NMIJ, *Kazuaki Fujita / Naoki Kuramoto (NMIJ)*
- Small Force-Displacement Measurement System: Ongoing Interlaboratory Comparison and Traceability for Electrostatic Calibration, *Valeriya Cherkasova (TU Ilmenau)*
- Calibration on the spring constant of the microcantilever for nanogram-scale measurement with optical pressure, *Yue Wang (NIM)*

15:30 – 16:00 *Coffee break*

- ☐ Measurement scheme and data processing, chaired by Henri Baumann (METAS)
METAS, NPL, NRC, BIPM

17:00 *End day*

Day 2, Wednesday 19 November, starting at 9:00

- ☐ Table-top Kibble balance, chaired by Yinhsien Fung (MSL)
 - Design of a tabletop Kibble balance for kilogram-Level, E2-Class mass calibrations, *Nanjia Li (Tsinghua university)*
 - NIST balance KIBB-g2, *Kumar Arumugam (NIST)*
 - Mass calibration from 1 mg to 10 g with the Planck-Balance of PTB, *Johannes Konrad (PTB)*
 - System description and organization of the Planck-Balance 2, *Norbert Rogge (TU Ilmenau)*

10:30 – 11:00 *Coffee break*

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Day 2, Wednesday 19 November, starting at 9:00 (continuation)

- ☐ Evaluation of measurement uncertainties, chaired by Matthieu Thomas (LNE)
METAS, NPL, NRC, PTB, BIPM, NIST-PTB-TU Ilmenau

- ☐ Additional topics, chaired by Dongmin Kim (KRISS)

- Dynamic effects in ac Kibble systems, *Norbert Rogge (TU Ilmenau)*
- Influence of helium contamination on rubidium clocks, *Christian Rothleitner (PTB)*

13:00 – 14:00 Lunch

- A weighing unit for the Tsinghua tabletop Kibble balance, *Weibo Liu (Tsinghua university)*
- Compact fiber-coupled interferometer for velocity mode measurements in a 6-DoF multicomponent force and torque measurement system, *Vitalii Shmagun (TU Ilmenau)*
- Preliminary research on the joule balance for the space station with microgravity, *Zhengkun Li (NIM)*

- ☐ Next KBTM and any other business

15:00– 15:30 Coffee break

- ☐ Visit of the BIPM Kibble balance laboratory

17:30 – 19:30 Cocktail reception

Day 3, Thursday 20 November, starting at 9:00

Special session on knowledge transfer

chaired by Christian Rothleitner (PTB) & Stephan Schlamminger (NIST)

- ☐ Overview of core topics

- General considerations for building a Kibble balance, *Ian Robinson (NPL)*
- Mass, gravity & vibration, *Richard Green (NRC)*
- Magnet/coil design & effects, *Shisong Li (Tsinghua university)*

10:45 – 11:15 Coffee break

- Mechanism & alignment, *Darine Haddad (NIST)*
- Optical sensors & data synchronization, *Franck Bielsa (BIPM)*
- Electrical measurements, *Ian Robinson (NPL)*

13:00 – 14:00 Lunch

- ☐ Audience Q & A

15:30 – 16:00 Coffee break

- ☐ Visit and demonstration at the BIPM Kibble balance laboratory