SIM MWG7

Mass and Related Quantities

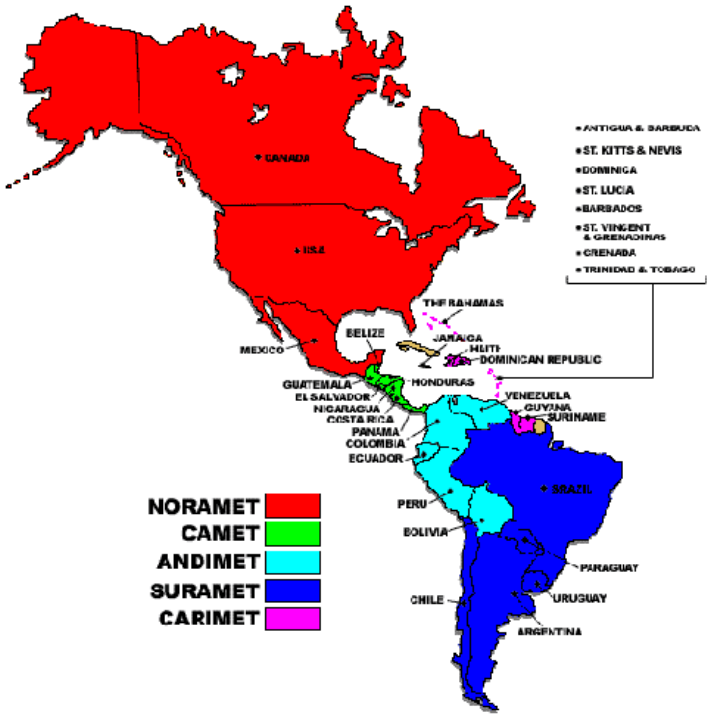
Meeting BIPM, Paris
May 18 - 19, 2017

16 th meeting of CCM

- *SIM Activities*

SIM –Sistema Interamericano de Metrología

Noramet Carimet Camet Andimet Suramet



SIM.- Organized in five subregions (34 countries):

Noramet: North America, 3 NMI

Carimet: Caribbean 14 NMI

Camet: Central America 7 NMI

Andimet: South America 5 NMI

Suramet: South America 5 NMI

SIM WG 7. Mass and Related quantities
Internal structure and co-chairs (2017)

Chair		Aldo Quiroga	INACAL (Perú)	aquiroga@inacal.gob.pe
Co-chairs	Density	Luis Omar Becerra	CENAM (Mexico)	becerra@cenam.mx
	Force	Alejandro Savarin	INTI (Argentina)	asavarin@inti.gob.ar
	Pressure	Jorge Torres	CENAM (Mexico)	jtorres@cenam.mx
	Mass	Luis Manuel Peña	CENAM (Mexico)	lpena@cenam.mx
	Hardness	Sérgio P. de Oliveira	INMETRO (Brazil)	spoliveira@inmetro.gov.br

Key and Supplementary comparisons in Mass

SIM.M.M-K6	50 kg	In progress	7 NMI
SIM.M.M-S6	10 kg, 2 kg, 1 kg, 200 g, 50 g, 1 g y 200 mg	Draft B	2 NMI
SIM.M.M-S11	2 kg, 1 kg, 200 g, 50 g, 1 g and 200 mg	Draft A	7 NMI
SIM.M.M-S12	50 kg	Draft A	3 NMI
SIM.M.M-S13	10 kg and 2 kg	Draft A	3 NMI
SIM.M.M-S16	2 kg, 1 kg, 200 g, 50 g, 1 g and 200 mg	Report in Progress	4 NMI

Key and Supplementary comparisons in Density

SIM.M.D-K3	Volume of solid weights	In progress	**7 NMI**
SIM.M.D-S4	Comparison of calibrations of hydrometers for liquid density determination	Draft B	2 NMI
SIM.M.D.S5	Volume of weights of 2 kg, 1 kg, 200 g, and 1 g	Draft A	7 NMI

Key and Supplementary comparisons in Force and Fluid Flow

SIM.M.F-S2	Calibration of a force testing machine in compression Force: 10 000 N to 100 000 N	Draft B	2 NMI
SIM.M.F-S3	Comparison of instrumented Charpy tests	Draft B	2 NMI
SIM.M.F.S4	Calibration of a force transducer in compression	Protocol complete	4 NMI
SIM.M.FF-S8	Volume of liquids: 100ml and 5 ml	Draft A	2 NMI
SIM.M.FF-S9	Flow Rate: Water Coriolis and turbine meter	Protocol Complete	4 NMI

Key and Supplementary comparisons in Pressure

SIM.M.P-K1	Pneumatic pressure. Piston-cylinder unit 600 kPa to 7 Mpa	Report in progress since	11 NMIs
SIM.M.P-K1.c	Pneumatic pressure Digital manometer 600 kPa to 7 Mpa	Stopped by a failure in the transfer artifact. It will be restarted when possible	16 NMIs
SIM.M.P-K6	Pneumatic pressure Effective area of a piston-cylinder unit10 kPa - 120kPA	Report in progress	11 NMIs
SIM.M.P-K6.1	Pneumatic pressure 10 kPa - 120kPA Digital manometer	Stopped by a failure in the transfer artifact. It will be restarted when possible	11 NMIs
SIM.M.P-K2	Absolute pressure 10 kPa to 120 kPa	Stopped by a failure in the transfer artifact. It will be restarted when possible	14 NMIs
SIM.M.P-K7	Pressure in liquid	Approval in progress	7 NMIs

Key and Supplementary comparisons in Pressure

SIM.M.P-S5	Negative gauge mode 10 kPa to 100 kPa	Stopped by a failure in the transfer artifact. It will be restarted when possible	11 NMIs
SIM.M.P-S8	Hydraulic gauge pressure 0 MPa to 70 Mpa	Planned	ENAER-INTN
SIM.M.P-S9	Pneumatic pressure range: 0 MPa to 2 MPa	Planned	ENAER-INTN
SIM.M.P-S10	Pressure 700 kPa to 7000 kPa	Report in prgoress	6 NMIs
SIM.M.P-S2	Pressure measurements (gauge mode)	In progress since 2011	INMETRO – CENAM - LNE
SIM.M.P-S3	Pressure measurements (gauge mode)	Protocol complete since 2010	ENAER-INACAL
SIM.M.P-S4	Pressure measurements (gauge mode)	Protocol complete since 2010	ENAER-INACAL

Key and Supplementary comparisons in Gravity and Torque

SIM.M.G-K1	Free fall accelerator	Draft B	4 NMI
SIM.M.T-S1	Torque measurements	In Progress	2 NMI

SIM Activities

Workshop on Mass and Density (Lima, July 2016)

1. Mass and Density Groups meeting

    - Report from SIM-TC

    - status of comparisons and CMCs, criteria for CMCs reviews

    - election of co-chairs and proposal for new chair candidates for 2017-2019

2.Alternative methods for micro-balances calibration

3. Review of SIM Guide on Non-automatic Weighing Instrument Calibration

4.Presentation of SIM Guidelines on calibration of Density Meters

SIM Activities

Workshop on Force & Torque – Pressure & Vacuum. (Pereira City, Colombia, May 2017)

1. Pressure & Vacuum and Torque Groups meeting

    - Status of Pressure and Forces comparison

    - Election of co-chairs and proposal for 2017-2019

2. Measurement of mechanical magnitudes under dynamic conditions

3. Traceability proposal in dynamic torque

4. Calibration and verification of weighing systems using force or pressure transducers

Projects:

- New supplementary comparison LACOMET – CENAM: 2 kg, 1 kg, 200 g, 50 g, 1 g and 200 mg

- Pilot comparison methods for micro-balances calibration

Thank you!