

FixO3 Workshop on training for less experienced users of hardware September 15 – 17, 2015

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An Introduction to Calibration & Measurement

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Reliable calibrations of instruments require dedicated laboratory facilities, specifically trained personnel, and proven competence. Everyone professes to work with calibrated sensors always, but very few actually maintain, or even feel it is necessary, to maintain such facilities and personnel for this crucial activity. In practice, in fact, the performance of a sensor is often deemed acceptable just on the basis of its declared specifications and a loose adherence to the manufacturer's recommended programme for factory maintenance and re-calibration.

The Centro di Taratura e Metrologia Oceanografica (CTMO) is the oceanographic testing and calibration facility of the Oceanography Section of the OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale). Thermally-regulated and humidity-controlled, the CTMO provides the Section with the scientific and technical infrastructure necessary for calibrating and maintaining its sea-going instrumentation efficiently. It is supervised and manned by a small team of experienced technicians, the CTMO Group headed by Mr. Nevio Medeot, which also oversees the facility's scientific and technological development. Currently, the CTMO can provide temperature and conductivity calibrations able to meet the demanding oceanographic measurement specifications for these parameters. It is also capable of performing functional tests, evaluations and validations of instrumentation used for measuring other commonly monitored parameters like turbidity, pH, dissolved oxygen, etc. The facility is run applying relevant international guidelines and protocols as much as practically possible in order to assure conformity or, at least, compatibility, with the regulatory standards governing this kind of activity worldwide.

The CTMO carries out research specifically aimed at dealing with critical metrology-related issues, both in-house and also internationally through initiatives such as the recently concluded EU FP7 JERICO ("Towards a Joint European Research Infrastructure Network for Coastal Observatories") project and EURAMET's European Metrology Research Programme (EMRP). The research activities go hand-in-hand with, and are enriched by, the facility's primary mission which is to ensure that the Oceanography Section's marine instrumentation operate in a way that continuously meets recognized international standards of excellence.