Joint SCOR/IAPSO/IAPWS Committee on the Properties of Seawater (JCS)

Report to SCOR and IAPSO on JCS Activities July 2013-June 2014

Membership

**Executive**
- Rich Pawlowicz (Chair) - Canada
- Rainer Feistel Vice-chair - Germany
- Trevor J. McDougall (Vice-chair) - Australia

**Salinity/Density Subgroup**
- Frank J. Millero - USA
- (Rich Pawlowicz) - Canada
- Steffen Seitz - Germany
- Hiroshi Uchida - Japan
- Stefan Weinreben - Germany
- **Youngchao Pang** - China ← NEW MEMBER

**pH Subgroup**
- Maria Filomena Camoes - Portugal
- Andrew Dickson - USA
- Petra Spitzer - Germany

**Relative Humidity Subgroup**
- Olaf Hellmuth - Germany
- Jeremy Lovell-Smith - New Zealand

**Thermodynamics**
- (Rainer Feistel)

**Numerical Modelling and Applications**
- (Trevor J. McDougall)

**Software**
- Paul Barker - Australia

**Industry Representatives**
- Paul Ridout (OSIL) - UK
- Barbara Laky (Anton Paar) - Austria

Meetings

JCS met as a full group for several workshops at the 2013 International Conference on the Properties of Water and Steam (Greenwich, UK, Sept 2013). For each workshop, a set of tasks were defined in support of efforts to make SI traceable definitions for seawater salinity, pH, and the relative humidity of moist air. Partial meetings of the Salinity/Density and pH subgroups also took place at the ENV05
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final meeting (Berlin, June 2014) to discuss these tasks.

Activities


2. Sept. 2013 – Seabird Electronics releases TEOS-10 support for their SBEDataProcessing software (assistance PB).


4. Dec 2013 – release of v3.04 of GSW toolbox (includes gas solubilities and many sea-ice-related functions) (PB,TM)

5. April 7-11 2014 - RP attends BIPM/CCQM meeting (includes other members of pH and salinity/density subgroups) to work on SI traceability

6. May 19-23 - RF attends BIPM/CCT meeting (includes other members of RH subgroup) to work on SI traceability.

7. May 2014 - RF circulates draft of BIPM position paper.

8. June 16-17 2014 – EURAMET ENVO5 project has workshop (Berlin), many ENVO5 members are also in JCS, discussions of pH/salinity (also attending, RP, HU, AD).


Web site

www.teos-10.org is getting 1500-2000 visitors per month with 24574 “unique views” since Oct 2010.

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Other Progress

1. TM working with several modelling groups (MOM, NEMO) to add TEOS-10 support.
2. FM preparing paper summarizing all open-ocean density anomaly measurements.
3. RP/FM carry out density anomaly measurements in N. Pacific (Line-P program).
4. HU and FM continuing measurements of density in SSW batches.

Papers published


Papers in Preparation:

1. Metrological challenges for measurements of key climatological observables: Oceanic salinity and pH, and atmospheric humidity, R Feistel, R Wielgosz, S A Bell, M F Camoes, J R Cooper, P Dexter, P Fisicaro, D P Gatley, A H Harvey, M Heinonen, O Hellmuth, N Higgs, H-J Kretzschmar, J W Lovell-Smith, T J McDougall, R Pawlowicz, S Seitz, P Spitzer, D Stoica and H Wolf. (Position paper on future cooperation activities between BIPM and IAPWS, to be published in Metrologia)


R. Pawlowicz
JCS chair, July 15, 2014