

# 1st EuroSea Tide Gauge Network Workshop

12-14 January 2021, 4pm - 6pm CET

## Draft annotated Agenda

### Tuesday 12 January

- **Begoña Pérez Gómez** (PdE, EuroGOOS Tide Gauge Task Team), Welcome and introduction to the Workshop (5 min)
- **George Petihakis** (HCMR, EuroGOOS), Address from EuroSEA WP3 (10 min)

## Session 1: National experiences from Europe and beyond (including impact of COVID-19)

Chair: Angela Hibbert (NOC, UK)

Keynote: **Silvia Chacón Barrantes** (ICG/CARIBE-EWS): Caribbean Sea Level Network (15 min)

### Reports from network operators (3 mins each/5 slides):

1. **Vilibić, I.** (IOF, Croatia): Recent upgrades of the Croatian tide gauge network
2. **Hammarklint T.** (SMA, Sweden): Upgrade and harmonization of the Swedish Sea level stations into one common network (SHIP)
3. **Westbrook, G.** (IMI, Ireland): Irish National Tide Gauge Network
4. **Martín Guijarro, V** (IGN, Spain): Spanish Geographic Institute Sea Level Network
5. **Pérez Gómez, B.** (PdE, Spain): REDMAR network (Spain)
6. **Smith, E.** (NOAA, US): US Network update
7. **Rowe, G** (NZHA, New Zealand): New Zealand's Tide Gauges - A Collection of Individuals (pre-recorded)
8. **Dhoop, T** (NOC/ChannelCoast, UK): Towards an antifragile network: Lessons learned from the impact of COVID-19 on the Regional Coastal Monitoring Programme's Tide Gauge Network
9. **Swimburne, P.** (UK Environment Agency): UK tide Gauge Network
10. **Fraboul, C.** (SHOM, France): SHOM Tide Gauge Network
11. **Huess, V** (DMI, Denmark): Danish Tide Gauge Network
12. **Sezen, E.** (General Directorate of Mapping, Department of Geodesy, Turkey): Coastal Sea Level Monitoring in Turkey
13. **Afrasteh, Y.** (TU Delft, Netherlands): Referring all tide gauges to a common surface using model-based hydrodynamic leveling technique

Discussion on national experiences

Wednesday 13 January

## **Session 2: New sea level technologies**

Chair: Laurent Testut (SONEL, France)

Keynote: **Simon Williams** (NOC, UK): Global Navigation Satellite Systems Interferometric Reflectometry (GNSS-IR). A perspective on the technology for sea level studies from the background, challenges, advantages, current availability as a global network and future prospects (15 min)

(3 min each/5 slides)

1. **Andrew Matthews** (NOC-PSMSL, UK): Extending sea level records by rescuing historical data using a citizen science platform
2. **Pugh, J, and Hibbert, A** (NOC, UK): Advances in Tide Gauge Technology in the South Atlantic and Mediterranean
3. **Severine Enet** (SHOM, France): RONIM French Tide Gauges Network
4. **Puente, V., and Martín, V** (IGN, Spain): Long-term series of sea level in the Mediterranean coast of Spain using GNSS-MR
5. **Dorgeville, E.** (MIROS, Norway): The Miros RangeFinder, a IoT radar based solution to measure sea level and waves in real time
6. **D.A. Galliano** (JRC, EU): Use of differential GPS on buoys for sea level measurements
7. **Chupin, C.** (La Rochelle Univ, France) Mapping Sea Surface Height using new concepts of kinematic GNSS instruments
8. **F. Oreiro** (Servicio de Hidrografía Naval, Argentina): Water level gauges using smartphones (Prerecorded)

*Discussion (10 min)*

## **Session 3: Data flow and data management**

Chair: Begoña Pérez Gómez (PdE, Spain)

Keynote: **Liz Bradshaw** (BODC, UK): Global sea level data - moving towards a free and FAIR flow (15 min)

- Brief introduction on topics covered by the EuroGOOS Tide Gauge working group on data flow (3 mins each / 5 slides):
  - **Guy Woppelmann**: How do we define what a tide gauge 'station' is?
  - **Liz Bradshaw**: Can we create unique identifiers for stations / instruments etc?

- **Marta Marcos:** What types of metadata exists for tide gauges, and what metadata is essential?

(3 mins each/5 slides)

1. **Belbeoch, M.** (OceanOPS): Tide Gauges Network Monitoring & Support by OceanOPS
2. **WestBrook, G.,** (IMI, Ireland): Eurosea D3.15: New tide gauge metadata catalogue

Discussion (25 min)

**Thursday 14th January**

## **Session 4: GNSS co-location of tide gauges**

Chair: Thomas Hammarkindt (SMA, Sweden)

Keynote: **M. Gravelle** (SONEL, France). The importance of GNSS measurements at tide gauges, best practices, data flow, GNSS solutions (15min)

(3 mins each /5 slides)

1. **Zurutuza, J.** (ARANZADI - Dept. of Applied Geodesy, Spain): Multi-technique facilities as the key in the Sea Level Analysis: the PASA case study
2. **Hijma, M.** (Deltares, Netherlands): Combining GNSS- and tide-gauge data to understand sea-level changes in The Netherlands
3. **WestBrook, G** (IMI, Ireland), GLOSS work to date and accessing expertise as a new GNSS operator

Discussion (10 mins)

## **Session 5: Influence of waves, infragravity waves and meteotsunamis on extreme sea level records**

Chair: Anna von Gyldenfeldt (BSH, Germany)

Keynote: **Marta Marcos** (IMEDEA, Spain): Impact of wind-waves on coastal sea level during extreme events (15 mins)

(3 mins each/ 5 slides)

1. **Zemunik, P.** (IOF, Croatia): Atmospherically-induced sea-level oscillations at tsunami timescales – a global insight
2. **Jue Lin-Ye** (PdE/LIM, Spain): Asymmetry of the sea water surface: medians to reduce its impact on the 1-min products

3. **Garcia-Valdecasas J.** (Oritia & Boreas, Spain): Characterization of high frequency sea level oscillations in near real time: NivMarHF operational tool.

Discussion (10 mins)

## **Round-up session**

(30 mins)

- Produce recommendations based on the outputs and discussion in the different sessions;
- Discussion on points raised in the meeting and inputs from the attendants.