Training T04: "Exploring acoustic and oceanographic data, including methods and tools"

Monday 23rd – Wednesday 25th June 2025, Bath, UK

Monday (University of Bath campus, room 8-West 2.20)

0930 – 10:10: Welcome, registration and refreshments

10:10 – 10:15: Introduction to the training event *(Ph. Blondel, U. Bath)*

10:15 – 11:05: Basics of underwater acoustics (Ph. Blondel, U. *Bath*)

      Lecture: from sound generation to basic propagation and measurements.

11:05 – 11:15   Coffee Break

11:15 – 12:05: Passive Acoustic Monitoring and Soundscapes (Ph. Blondel, J. Cleverly, U. *Bath*)

      Lecture: PAM and selected applications around the world.

12:15 – 13:15: Lunch (catered)

13:15 – 14:05: PAMGuide and HiAOOS-type measurements (Ph. Blondel, J. Cleverly, U. *Bath*)

      Lecture: Interactive presentation of PAMGuide in action, with data relevant to HiAOOS.

14:15 – 16:00: PAMGuide in practice - Hands-on activity (Ph. Blondel <u>and</u> J. Cleverly, *U. Bath*)

      Interactive session: delegates use PAMGuide on their own computers and *U. Bath*. <u>Matlab or R</u> are necessary. If delegates do not have it, a parallel session is offered using a Bath PC.

16:00 – 16:30: *Tea/coffee break*

16:30 – 18:15: Methods and tools for oceanographic data (E. Storheim, *NESRC*)

      Interactive session: From CTD profiles to Bellhop simulations, using a Jupyter notebook and the TEOS-10 toolbox. Users without <u>Python</u> will be provided with a docker.

18:15 – 20:00: *Break*

20:00: No-host dinner in Bath (guests pay for their own food and drink).

Lectures will be recorded as they will be useful for future HiAOOS Training events.

Catering: please indicate any dietary requirements on the registration form.

Tuesday (University of Bath campus, room 8-West 2.13)

09:15 – 09:30: Welcome, registration and refreshments

09:30 – 10:25**:** Marine geophony – Basics (M. Anichini and/or M. Sørensen, UiB)

    Lecture: geophony, "abrupt geophony" and earthquake acoustics.

10:30 – 11:05: Snapshots on previous scientific works (M. Anichini and/or M. Sørensen, UiB)

    Lecture: study cases and focus on T-phase studies and analytical approaches.

11:05 – 11:15: Coffee break

11:15 – 12:05: Data Exploration and manual detection (M. Anichini and/or M. Sørensen, UiB)

    Interactive session: PAM exploration of CAATEX data, spotting and annotating target signals. This will use open-source software Audacity (https://www.audacityteam.org/)

12:15 – 13:15: Lunch (catered)

13:15 – 14:05: – Data handling and analytical methods (M. Anichini and/or M. Sørensen, UiB)

    Interactive session: processing of earthquake signals and numerical results (SPL, PSD). This will use Python and PAMGuide (Matlab or R). If delegates do not have it, a parallel session is offered using a UiB PC.

14:15 – 15:20: From oceanography to acoustics (E. Storheim, NESRC)

    Lecture: Linking oceanography session of previous day to current applications, e.g. propagation of ship and earthquake sounds (in water and/or in/along seabed).

15:30 – 15:45: *Tea/coffee break*

15:45 – 18:00: Group Session(s)

    Interactive session(s): Participants can ask questions and work through different examples with the different session organisers.

18:00 - 18:05: Wrap up and closing remarks (Ph. Blondel, U. *Bath*)

Open evening (guests choose their own venues)

Wednesday (optional: social event and networking)

Currently planned: the World Heritage Site of Avebury Stone Circles. This might change depending on numbers registered and booking capabilities (transport and lunch).

The world-famous Avebury Stone Circles date from around 4,600 years ago. These outstanding Neolithic and Bronze Age monuments include a stone-lined avenue and the largest artificial mound in Europe (Silbury Hill). Depending on weather and walking abilities, we might also visit West Kennet Long Barrow nearby. More accessible than Stonehenge (27 km south), Avebury allows direct and unlimited access to these ancient stones. The Avebury Stone Circles are large enough to enclose a small village and a pub with traditional fare.

Please indicate in the registration form if you would like to attend this networking event.