47th Scandinavian Symposium on Physical Acoustics

Geilo, 28–31 January 2024

Program for Sunday, 28 January

19:00 Dinner

21:00 Opening of the symposium

21:15 Annual meeting of the Acoustics group of the Norwegian Physical Society

Program for Monday, 29 January

Monday morning session

08:30 1st presentation session

- *Aberration correction in 3D TTE echocardiography*
  Svein-Erik Måsøy (NTNU), Bastien Dénarié (GE Vingmed), Anders Sørnes (GE Vingmed), Tore Bjåstad (GE Vingmed), Torvald Espeland (NTNU/St. Olavs), Erik Andreas Rye Berg (NTNU/St. Olavs), Espen Holte (NTNU/St. Olavs), Bjørnar Grenne (NTNU/St. Olavs)
- *Acoustic sonoporation using clinical ultrasound to treat cancer*
  Odd Helge Gilja (UiB)
- *Estimation of probability densities in ultrasound imaging*
  Håvard Kjellmo Arnestad (UiO), Ole Marius Hoel Rindal (UiO), Andreas Austeng (UiO), Sven Peter Näsholm (UiO)

09:30 Coffee and discussion break

09:50 2nd presentation session

- *Propagation of flow noise in multilayered oil pipeline systems subject to water and gas injection*
  Ehsan Hossein Zadeh Khezri (UiB), Per Lunde (UiB), Peter James Thomas (NORCE), Jan Kocbach (NORCE), Magnus Hjelstuen (SINTEF), Christian Brekken (SINTEF)
- *Hydrate plug detection in water injection lines*
  Sverre Kongsro Finstad (TSC Subsea)
- *Natural gas characterization by speed of sound*
  Kjell Eivind Frøysa (HVL), Jan Kocbach (NORCE)

10:50 Break for networking, skiing, and lunch

Monday afternoon session

15:00 3rd presentation session

- *Sonar performance modelling for clustered water masses*
  Jonas Halse Rygh (FFI), Karl Thomas Hjelmervik (USN), Trond Jenserud (FFI)
- *LASSIE: Low-frequency Active Sonar Simulations In the Environment*
  Stian Hartman (FFI)
- *A physicist's view on cardioid triplet beamform*
  Jørn Inge Vestgården (FFI)
- *Inverting the sound speed profile from multi-beam echo sounder data and historical measurements — a simulation study*
  Yohann Gourret (USN), Karl Thomas Hjelmervik (USN), Tommi Brander (USN)
- *Acoustic propagation through underwater random distribution of ice cubes simulation*
  Nicholas Chotiros (U. of Texas at Austin)

16:40 Coffee and discussion break

17:10 4th presentation session

- *Exploring the impact of Fourier window length on target strength frequency response estimation in broadband echosounders*
  Babak Khodabandeloo (IMR), Geir Pedersen (IMR), Tonje Nesse Forland (IMR), Rolf Korneliussen (IMR), Nils Olav Handegard (IMR)
- *Universality of linearly increasing absorption with frequency in complex media?*
  Sverre Holm (UiO)
- *Planning a new introductory textbook on waves in solids*
  Erlend Magnus Viggen (NTNU)

18:10 Academic program finished

19:00 Dinner

Program for Tuesday, 30 January

Tuesday morning session

08:30 5th presentation session

- *Machine learning for geoacoustic inversion*
  Hefeng Dong (NTNU), Xiaoyu Zhu (NTNU)
- *SICALC — The SINTEF noise calculator*
  Tor Arne Reinen (SINTEF), Herold Olsen (SINTEF), Leo Heggem Hauge (SINTEF)
- *Pitting corrosion detection in ultrasound data using machine learning*
  Magnus Wangensteen (NTNU), Tonni Franke Johansen (SINTEF/NTNU), Ali Fatemi (Sensorlink), Erlend Magnus Viggen (NTNU)

09:30 Coffee and discussion break

09:50 Special session for new acoustics students

10:10 6th presentation session

- *Listen2Future — airborne ultrasound*
  Helene Wold (Sonitor)

10:30 Break for networking, skiing, and lunch

Tuesday afternoon session

15:00 7th presentation session

- *Analytical modeling of laterally excited acoustic plate resonators*
  Vegard Tollefsen (USN), Hamed Salmani (USN), Agne Johannessen (USN), Ulrik Hanke (USN)
- *Effects of side-flow on acoustic beams generated by a uniform piston*
  Daudel Tchatat Ngaha (HVL), Kjell Eivind Frøysa (HVL)
- *Transducers for gas measurement in the lower hundred kHz frequency range*
  Mathias Sæther (UiB), Jan Kocbach (NORCE), Per Lunde (UiB)
- *Novel wide-band design of a dual frequency transducer using PZT and PVDF for super harmonic imaging*
  Duy Hoang Le (USN), Tung Manh (USN), Lars Hoff (USN)
- *Fabrication techniques of lithium niobate-based high temperature ultrasonic transducers for non-destructive testing up to 550°C*
  Josh Hoi Yi Siu (USN), Lars Hoff (USN), Martijn Frijlink (USN), Ali Fatemi (Sensorlink)

16:40 Coffee and discussion break

17:10 8th presentation session

- *Measuring a hydroacoustic transducer in a rod of ice*
  Thor Storm Husøy (KD), Sveinung Skjervheim (KD), Tor Arne Reinen (SINTEF)
- *Marine gas seepage detection using Hugin AUV*
  Seçkin Polat (UiO), Andreas Austeng (UiO), Sven Peter Näsholm (UiO), Roy Edgar Hansen (UiO/FFI), Ann Elisabeth Albright Blomberg (NGI)
- *Hydroacoustic fiber-optic sensing experiences in the Ligurian Sea*
  Julián Pelaez-Quiñones (UiB), Anthony Sladen (CNRS/Géoazur)
- *Smaug – Smart maritime and underwater guardian*
  Karl Thomas Hjelmervik (USN), Álvaro Gutiérrez (Technical U. of Madrid), Cesar Antonio Ortiz (Technical U. of Madrid)

18:30 Academic program finished

19:00 Dinner

Program for Wednesday, 31 January

Wednesday morning session

09:00 9th presentation session

- *Fourier migration based beamforming method for medical ultrasound imaging*
  Sufayan Mulani (UiO), Ole Marius Hoel Rindal (UiO), Andreas Austeng (UiO), Sven Peter Näsholm (UiO)
- *Spectral estimation inspired by a non-linear beamformer: Insights into null-subtraction imaging*
  Chaoran Han (UiO), Håvard Kjellmo Arnestad (UiO), Andreas Austeng (UiO), Sven Peter Näsholm (UiO)
- *Adaptive beamforming for high frame-rate ultrasound imaging*
  Mahsa Sotoodeh (UiO)
- *Resolution of adaptive beamformers*
  Gabor Gereb (UiO), Andreas Austeng (UiO), Roy Edgar Hansen (UiO/FFI), Tor Inge Birkenes Lønmo (KD), Sven Peter Näsholm (UiO)

10:20 Closing of the symposium

Instructions for regular presenters

- The time between presentations is 20 minutes.
- Please limit your talk to 15 minutes, allowing some time for questions and change of presenter.
- We prefer that you run your presentations from our dedicated presentation computer. Please upload your presentation to this computer before the start of your session and test that it works correctly. (Pay special attention to videos, equations, and special fonts and symbols.) The presentation computer can display PowerPoint, PDF, and LibreOffice files.
- If you need to use your own computer, please test it before the start of your session to ensure that it is compatible with the projector, and have everything ready before your presentation.

Instructions for student presenters

The student presentation session gives new students an opportunity to present themselves to the community, even without sufficient material for a full talk.

- You are given 3 minutes each to present yourself and your project
- Please prepare a presentation with one or two slides, containing:
    - Your name
    - The title of your project
    - The name(s) of your supervisor(s) and your institution and group
    - Short description of your project: Background, motivation, goals, etc.
    - Results, if you have any yet

Common affiliation abbreviations

- FFI: Norwegian Defence Research Establishment
- HVL: Western Norway University of Applied Sciences
- IMR: Institute of Marine Research
- KD: Kongsberg Discovery
- NTNU: Norwegian University of Science and Technology
- UiB: University of Bergen
- UiO: University of Oslo
- UiT: University of Tromsø
- USN: University of South-Eastern Norway