

Term Assignment

Selection of five key publications: October 4th

Presentation due date: November 22nd

Description: The objective of this project is to write a review and explanation of a method or application of in acoustical oceanographic. The presentation should aim to be clear and informative, suitable for the class audience or a conference of experts. The presentation must cite at least five key publications on the topic, although the widest read possible is encouraged. The current state-of-the-art of the research topic should be presented. Presentations will be 15 minutes, ~12 minutes of discussion, with ~3 minutes for questions at the end.

Resources: Journal subscriptions are available when connected to the Dalhousie Network. VPN access is available through the library website.

Topics: The following topics are suggested, although you may choose an unlisted topic with approval of Dr. Barclay or Dr. Hay.

Noise tomography in the deep ocean
Acoustical tomography in deep and shallow water
Broadband scattering: acoustic colour
Time reversal ocean acoustics
Underwater acoustic communications
The effect of internal waves on propagation
Passive geoacoustic inversion
Surface processes using active sonar
Seabed processes using active sonar
Sediment generated noise
Acoustic identification of fish species
Non-linear methods for geoacoustic inversion and acoustic localization
Range estimation and tracking of marine mammals with a single hydrophone
Quantifying rainfall at sea with passive acoustics
Acoustic signature of snowfall in open and ice covered seas
Effect of ice cover on propagation
Surface wave effects on propagation
Acoustic vector sensor performance
Passive estimates of air-sea gas exchange
Acoustic gravity waves
Seismic oceanography

Grading: A grade out of 30 will be awarded. Equal weight will be given in the categories of

- 1) Scientific accuracy – Demonstrate a complete physical and mathematical grasp of the topic.
- 2) Instructional clarity – How clearly does the presentation explain the questions that arise from the topic? Are the explanations at the appropriate level?