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Research Interests

Physical oceanography, Dynamics of the surface layer, Air-sea interaction, Air-sea gas exchange, Data analysis and modeling, Oceans and Atmosphere circulation, Ocean turbulence and mixing, Physical-biological couplings, Renewable Energy, Global change and environment

Languages

English, French and Persian

Education

- **PhD in Water Science (Physical Oceanography)** **2008-01–2014-04**
Department of Water, Earth and Environment, Quebec University, National Institute of Scientific Research (INRS), Quebec City (QC), Canada
 - Data sampling during the ArcticNet program, aboard the CCGS Amundsen
 - Analysis and interpretation of oceanographic data collected during different programs such as CASES, ArcticNet, CFL and Malina
 - Study the temporal and spatial variation of the mixed layer depth in the Beaufort Sea and Amundsen Gulf using various visual and statistical techniques
 - Investigate the relations between the atmospheric and oceanic fluxes, ice thickness as well as *Chlorophyll a*, and the mixed layer depth
 - Student member of Québec-Océan
- **MSc in Physics** **2004-09–2007-02**

Physics Department, University of Isfahan, Isfahan, Iran

- **BSc in Physics**

1999-09–2004-08

Physics Department, Isfahan University of Technology, Isfahan, Iran

Some participated projects

- **INSF (Iran, PI)** Modeling the temporal Caspian Sea level variations and its effects on the energy harnessing of the outlet water flow toward the sea in Shahid Salimi (Neka) power plant **2023-Present**
- **INSF (Iran, PI)** Field study of the response of the southern Caspian Sea mixed layer and related biological and chemical parameters to the spatial, temporal and climatic variability **2018-2022**
- **Shahid Salimi Power Plant (Iran, Co-PI)** Feasibility study of using micro water-turbines in condenser outlet water flow passages of CHP and steam power plant units **2020-2021**
- **Hormozgan Regional Electricity Company (Project monitoring)** Feasibility study of electricity generation from marine energy in Hormozgan province **2018-2020**
- **INSF (Iran, Co-PI)** The Spatial Distribution Modeling of CO₂ Gas in Relation to Land Cover Components using OCO-2 Satellite Data **2018-2019**
- **CASES, CFL, ArcticNet, Malina (Canada- PhD student, RA)** **2008–2014**

Academic, Research and Teaching Experience

- **Current Research project**
 - Temporal and spatial variations of water vertical structure in the southern Caspian Sea (Mazandaran, Iran)
- **Teaching**
 - Teaching, Tarbiat Modares University, Iran, 2016-2017
Data Analysis in Physical Oceanography, Descriptive Physical Oceanography, Instrumentation and Field Work
 - Teaching Assistantship, Queen's-RMC University, Kingston, Canada, 2015; Physics
- **Multidisciplinary Projects**
 - Comparison between Lagrangian and Eulerian formulations in the sediment model in different turbulence and initial conditions and their impacts on the phytoplanktons simulation; Collaboration between ISMER Institute of Marine Science Rimouski (QC, Canada) and INRS (QC, Canada), 2012
 - Effects of meteorological parameters and turbulence on gas flux estimations from thaw ponds on Bylot Island, Nunavut; Collaboration between department of ecology and evolution of marine biology at the University of California, Santa Barbara (CA, USA) and INRS (QC, Canada), 2011

- **Field Works**

- Caspian Sea, Iran, 2016-2019
- Persian Gulf, Iran, 2016
CTD and Sediment Sampling
- Aboard the CCGS Amundsen, Canada 2011
ArcticNet (Network of Centres of Excellence of Canada); Labrador Sea, Baffin Bay and Canadian Northwest Passage (Leg 1); Rosette Operation

Certification and Additional Skills

- **Computer Skills**

- Proficiency in: Matlab programming, Microsoft Office
- Knowledge of: GOTM (General Ocean Turbulence Model), Delphi, FORTRAN, SPSS, LINUX, Latex, EndNote, FVCOM, Mike 21, ROMS.

- **French Language Certificate**

- Test d'évaluation du français adapté au Québec, TEFAQ B2 (2013)
- Diplôme d'études en langue française, DELF A2 (2008)

Chapter in Book

- Gratton, Y., Bourgault, D., Galbraith, P.S., Prieur, L., Tsarev, V., Barette, J., Salcedo- Castro, J., Nahavandian E. S., Sharatunova, M., Brouard, C., Hamel, Sévigny, C. Rail, M.-E., Lago, V. Guillot, P., Bélanger, C., and Boisvert, D. 2012. Team 1 Physical Oceanography. Pages 33-50 in D. Barber, Tjaden, T., Leitch, D., Barber, L., and Chan, W. *On the Edge: From Knowledge to Action during the Fourth International Polar Year Circumpolar Flaw Lead Study*. Prolific Printing, Winnipeg, 243 p.

Publication and Presentation

- Mehrabi D. I., Nahavandian S. Shafaat A. (2024). The impact of climate change on security and measuring the effectiveness of Makran beaches, 1st International Conference on Blue Economy Bandar Abbas, University of Hormozgan.

- Nahavandian S. (2024). Some scientific programs in the Arctic and Antarctic; Fleet Mission 86 as a support forces for the scientific cruises in the oceans around the world, National conference to explain the dimensions and achievements of the Fleet Mission 86.

- Rokni Z., Falahatkar S., Nahavandian S. (2023). Comparison of RXD Algorithm and NHI Index in Identifying Thermal Abnormality caused by Flaring, 5th National Environmental Engineering and Management Conference.

- Rokni Z., Falahatkar S., Nahavandian S. (2023). Comparison of RXD Algorithm and NHI Index in Identifying Thermal Abnormality caused by Flaring, 8th Regional Conference on Climate Change and Global Warming.

- Arjmandi M., Nahavandian S., Dehghan M. (2023). A review of hydropower with an emphasis on small electricity generation, The 8th International Conference on Technology and Energy Management (8ICTEM).

- Nahavandian S., Mehraby Dastenay, I., (2023). Variation of the water sound speed in Southeastern Caspian Sea based on the field measurements. *IJMT*, 10 (1) . 91-100.
- Jannar Fereidouni F., Nahavandian S., Mahmoudi N., (2022). On the seasonal variability of the vertical physical structure of the water column in the continental shelf, south-eastern Caspian Sea. *Journal of Sea Research*.
- Mehraby Dastenay, I., Nahavandian, S. (2022). Investigation of the affectability of the Surface Sound Channel from Sensible heat flux in the Northern Indian Ocean during the summer monsoon. *Hydrophysics*, 7(2).
- Nahavandian S., (2021). Seasonal variations of chlorophyll-A, dissolved oxygen and turbidity in the southern Caspian Sea (Noshahr coast). *JFST*; 10 (3) :325-341.
- Ajdari A, Nahavandian S, Jackson J., (2021). Monthly variations of the mixed layer properties in the Franklin Bay in the Arctic Ocean, between fall 2003 and spring 2004. *joc*; 12 (47) :29-52.
- Nahavandian S., (2021) Seasonal variations of Chlorophyll-a, Salinity and turbidity in the southern Caspian Sea in warm and cold seasons; in Noshahr region, 3rd National Conference on Environmental Engineering and Management (3CEEM).
- Nahavandian S., (2021). Seasonal variations of Temperature, Salinity and density in the southern Caspian Sea in warm and cold seasons; in Noshahr region, 3rd National Conference on Environmental Engineering and Management (3CEEM).
- Jannar Fereidouni F., Nahavandian S., Mahmoudi N., (2020). Seasonal variations of the water vertical structure and estimation of the mixed layer depth based on the temperature using threshold method in Babolsar and Ramsar regions, *Journal of the Earth and Space Physics*. 46(1), 159-174.
- Nahavandian S., (2019). Temporal and Spatial Variations of the Surface Temperature and Salinity in the Amundsen Gulf and the Beaufort Sea in the Canadian Arctic Ocean. *Journal of Oceanography*. 10 (39) :89-100.
- Jannar Fereidouni F., Nahavandian S., Mahmoudi N., (2019). Seasonal variations of temperature, Oxygen and chlorophyll-a in the southern Caspian, Noshahr region, Regional conference on climate change, Tehran, Iran.
- Ajdari A., Nahavandian S., Jackson J., (2019). Water Masses properties in the Franklin Bay in the Arctic Ocean, Regional conference on climate change, Tehran, Iran.
- Nahavandian E., (2019). Temporal variations of the temperature and salinity in the Amundsen Sea in the Southern Ocean, 4th National conference on climate change and its impacts on Agriculture and environment, Urmia, Iran.
- Jannar Fereidouni F., Nahavandian S., Mahmoudi N., (2019). The mixed layer variations in Babolsar and Ramsar in the Southern Caspian Sea, 8th International Offshore Industries Conference, Tehran, Iran.
- Ajdari A., Nahavandian S., Jackson J., (2019). Seasonal variations of the surface and subsurface Physical Parameters of in the Franklin Bay in the Arctic Ocean, 8th International Offshore Industries Conference, Tehran, Iran.
- Abdolahi A., Nahavandian S., (2019). Seasonal and Spatial Variations of the Water Physical Properties in Alashtroud and Lavijrood Regions, *Hydrophysics*, 4(2), 47-58.
- Nahavandian S., (2019). Temporal and Spatial Variations of the Surface Temperature and Salinity in the Amundsen Gulf and the Beaufort Sea in the Canadian Arctic Ocean. *joc*. 10 (39) :89-100.
- Abdolahi A., Nahavandian S., Mansouri D., (2018). Variations of vertical structure of water temperature in the coastal area of Noshahr and Lavijrood., *Journal of Research in Marine Sciences*. 3(2) , 311-322.

- Nahavandian S., Vasselali A., (2018). Seasonal variations of vertical structure in the deep waters of the Southern Caspian Sea, *Journal of Research in Marine Sciences*. 3(1), 278-286.
- Nahavandian S., Gratton, Y., (2017). Interannual evolutions of the physical properties in the Arctic Ocean, First International Conference on Oceanography for West Asia, Tehran, Iran.
- Nahavandian S., Vasselali A., (2017). Seasonal variations of the vertical water structure in the deep Southern Caspian Sea, The first International Conference in Marine and Atmospheric Sciences: Enviroments, and Renewable Energy, Tehran, Iran.
- Abdolahi A., Nahavandian S., Mansouri D., (2017). Investigation of the vertical water temperature in the coastal areas of Noshahr and Lavijgrood, The first International Conference in Marine and Atmospheric Sciences: Enviroments, and Renewable Energy, Tehran, Iran.
- Nahavandian S., (2017). Climate Change in the Canadian Arctic: On board of the research icebreaker CCGS Amundsen, 1st International Conference on Climate Change, Tehran, Iran.
- Nahavandian S., (2015). Mixed Layer Depth in the Canadian Arctic, Invited lecture, Queen's University, Kingston, Canada.
- Nahavandian S. (2014). Temporal and spatial evolution of the mixed layer in the southern Beaufort Sea and the Amundsen Gulf., Quebec University, Institut national de la recherche scientifique (INRS), PhD thesis.
- Nahavandian S., (2013). Prieur, L., Gratton, Y. Mixed layer depth and Surface Ocean fluxes evolutions in the southern Beaufort Sea and Amundsen gulf. 12th Conference on Polar Meteorology and Oceanography, American Meteorological Society, Seattle, Washington, USA.
- Forest, A., Coupel, P., Else, B., Nahavandian S., Lansard, B., Raimbault, P., Papakyriakou, T., Gratton, Y., Fortier, L., Tremblay, J.-É., Babin, M., (2013). Synoptic evaluation of carbon cycling in Beaufort Sea during summer: contrasting river inputs, ecosystem metabolism and air-sea CO₂ fluxes. *Biogeosciences Discuss.*, 10, 15641–15710.
- Nahavandian, S., (2012). Effects of meteorological parameters and turbulence on gas flux estimations from thaw ponds on Bylot Island, Nunavut. Institut national de la recherche scientifique (INRS), Québec, Canada.
- Nahavandian, S., Dumont, D., (2012). The comparison between Lagrangian and Eulerian formulation in the sediment model in different turbulence and initial conditions and their impacts on the phytoplanktons simulation. Report of mini project, collaboration between Quebec University (Institut des Sciences de la Mer de Rimouski) and Institut national de la recherche scientifique (INRS).
- Nahavandian, S., Gratton, Y., Prieur, L., (2011). Seasonal evolution of the mixed layer in the Amundsen Gulf and Beaufort Sea. Gordon Research Conferences Polar Marine Science, Ventura, California, USA.
- Nahavandian, S., Laurion, I., MacIntyre, S., (2011). Effects of meteorological parameters and turbulence on gas flux estimations from thaw ponds on Bylot Island, Nunavut. Report of project, collaboration between University of California, Santa Barbara, Department of Ecology Evolution and Marine Biology and Institut national de la recherche scientifique (INRS).
- Nahavandian, S., Gratton, Y., Prieur, L., (2010). Evolution of the mixed layer in the Amundsen Gulf and Beaufort Sea. Assemblée Générale Annuelle de Québec Océan, Québec, Canada.
- Nahavandian, S., (2007). Atmospheric effects on the electromagnetic waves propagation and investigation of radio ducts in the Persian Gulf region. Isfahan University, MSc Thesis.
- Hasanzadeh, E., Parvaresh, A., Nahavandian, S., (2006). evaporation duct over the Persian Gulf. The First International conference on Marine Science and Technology and the sixth National conference on Marine Science and Technology, Tehran, Iran.

- Hasanzadeh, E., Parvaresh, A., Nahavandian, S., (2006). Investigation of electromagnetic waves over the Persian Gulf. Proceedings of University of Isfahan's research week. Isfahan, Iran.