



PhD Position in Fully-Coupled Simulation of Marine Surface Layers

The **Marine Aero- & Hydrodynamics Laboratory** at the **Department of Marine Environment and Engineering** of **National Sun Yat-sen University** invites a highly motivated graduate student to join our research group. The PhD project will focus on the development of fully-coupled numerical models of turbulent air-water flow above and below the ocean surface waves. Turbulent processes around the air-sea interface control energy, momentum and substance exchange between the atmosphere and the ocean, thus are critical to the climate system. These processes also determine the environmental conditions central to the design, operation and maintenance of offshore structures and wind turbines. The prospective student will study the marine surface layers using large-eddy simulations (LES) and geometric volume of fluid (VOF) method. For the unresolved turbulence and wave motions, s/he will develop novel closure schemes by bridging conventional algorithms with machine learning paradigm. LES-VOF framework will then be applied to study wind-wave interactions in a variety of sea states and wind-wave alignment angles.

Qualifications

- Master of Science in Mechanical Engineering, Civil Engineering, Ocean Engineering, or any other relevant engineering/geoscience discipline.
- Strong background in fluid mechanics.
- Experience in computational fluid dynamics.
- Experience in scientific programming and data visualization.
- Proficiency in academic English.
- Familiarity with turbulence and wave mechanics is highly desirable but not required.

About National Sun Yat-sen University (NSYSU)

NSYSU is one of the top research universities in Taiwan. It is located in the “Southern Capital City” Kaohsiung that provides convenient international access by Kaohsiung International Airport and open space in the city and the nearby areas. This seaport-based city with a population of 2.7 million and extended subways and bus routes, offers vibrant activities seasoned with cuisines from various regions of the world. The campus of NSYSU sits on where the mountain and the beach meet, one of the most beautiful sceneries in Taiwan. Based on the proximity to the airport, seaport and ocean, the College of Marine Sciences was strategically designated as a key development center by the Education Ministry of Taiwan to attract top scientists since its establishment in 1980's. More information on NSYSU can be found in the link: <https://www.nsysu.edu.tw/?Lang=en>

Application

Interested applicants should send their CV, transcripts, publications along with one-page motivation letter via email to Dr. Asim Önder (email: asim.onder@mail.nsysu.edu.tw).

