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AMERICAN
UNIVERSITY OF BEIRUT
FACULTY OF ARTS & SCIENCES
Department of Earth Sciences



School of
Arts and Sciences

Department of
Computer Science and Mathematics

CAMS-EARTH SCIENCES THEMATIC
PROGRAM ON CLIMATE CHANGE
AND THE EASTERN MEDITERRANEAN

WORKSHOP ON OCEAN MODELING FOR THE EASTERN MEDITERRANEAN

MAY 22–23, 2024

POST HALL, BLUE ROOM 203 | ZOOM

SPEAKERS

Dr. Ibrahim Hoteit, *Earth Science & Engineering, King Abdullah University of Science & Technology, Kingdom of Saudi Arabia*

Dr. Roy El Hourani, *Laboratoire d'Océanologie et de Géosciences, Université du Littoral Côte d'Opale, France*

Dr. Sharif Jemaa, *The National Centre for Marine Sciences, Lebanon*

Dr. Myriam Lteif, *The National Centre for Marine Sciences, Lebanon*

Dr. Heinrich Dohna, *Department of Biology, American University of Beirut, Lebanon*

LEAD ORGANIZER

Dr. Leila Issa, *Associate Professor of Mathematics, Co-Program Lead, Computer Science, Program Coordinator, Mathematics, Lebanese American University - CAMS Fellow, American University of Beirut, Lebanon*

SYNOPSIS

Ocean dynamics play a crucial role in the transport of nutrients and pollutants in the ocean, thus greatly affecting the marine ecosystem and its diversity. These dynamics also play an important role in redistributing energy, thereby impacting circulation patterns and climate variability across various spatial and temporal scales. We are now witnessing ongoing advances in our ability to model and predict the evolution of oceanic flow structures, especially with the availability of remote sensing tools that make ocean observations possible almost “around the clock”. In addition, there is a growing sophistication in our ability to obtain in-situ data whenever oceanic expeditions are possible. In parallel, advances in state of the art numerical models, enabled by growing possibilities in computing power and data storage make ensemble simulations and predictions of ocean flows possible. This workshop sheds the light on various research activities in ocean modelling from the perspectives of data assimilation and machine learning. Special attention will be given to applications in the Eastern Mediterranean, where we hope as local researchers, to identify challenges specific to our side of the Mediterranean. We also hope to expose young local students and researchers from physics, applied math, earth sciences, marine biology and engineering to this exciting and important field. A roundtable discussion will follow the workshop. This discussion will involve local stakeholders to discuss collaborations opportunities and the way forward.

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