



**INTERNATIONAL
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MARINE
SCIENCE**



COLOMBIA **2018** TOWARDS A
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LatWaves 2018

3rd Latin American Symposium
on Water Waves

II Seminar of Advances: Interinstitutional Doctorate
Program in Marine Sciences

**NOVEMBER
19–23**

**UNIVERSIDAD
NACIONAL DE
COLOMBIA
SEDE MEDELLÍN**

PROGRAM

**AUDITORIUM ALEJANDRO LÓPEZ
CAMPUS ROBLEDO - M3 BLOCK, SECOND FLOOR
Cra. 80 # 65-223, Medellín Antioquia**

	Time	Talk number	Ocean and Society, and Marine Environmental Change
Opening	8:00-8:20		Registration 8:00 - 8:20
	8:20-9:15		Opening
	9:15-10:00	Plenary 1	Rodrigo Figueroa Pontificia Universidad Católica de Valparaíso, Chile
	10:00-10:30		Coffee break
	10:30-10:45	Talk 1-1	Innovations in the economic analysis and the evaluation of investments in coastal protection and ecosystem restoration in the Caribbean Juan Pablo Henao <i>Universidad de los Andes, Colombia</i>
10:45-11:00	Talk 1-2	Sustainability of fisheries and food security: An approximation from a Household Production model of fishermen in the Colombian Caribbean Myriam Vargas <i>Universidad de los Andes, Colombia</i>	
11:00-11:15	Talk 1-3	Heritage preservation, transformations and environmental interactions in coastal cities: San Francisco de Campeche, Mexico Dulce Aline Hernandez-Aviles <i>UNAM, Mexico</i>	
11:15-11:30	Talk 1-4 DICM	Governance and sustainability of the coastal and mangrove ecosystems of Cartagena de Indias Luis Fernando Sánchez Rubi <i>Universidad Nacional de Colombia, sede Medellín, Colombia</i>	
11:30-11:45	Talk 1-5	Tortuguero: an experience of conservation with the community Michelle Dorantes Palacios <i>Sea turtle conservancy, Mexico</i>	
11:45-12:00	Talk 1-6	Results of Fisheries Restoration with Colombian Social Work Nohora Galvis <i>Foundation ICRI Colombia, Colombia</i>	
	12:00-14:00		Free lunch break / Poster session
	14:00-15:00	Plenary 2	Maren Ziegler King Abdullah University of Science and Technology, Saudi Arabia/Justus Liebig University Giessen, Germany
Ocean and Society Chair: Jenny Leal	15:00-15:15	Talk 1-7	Social-ecological restoration in the Seaflower Biosphere Reserve - San Andrés, Providencia and Santa Catalina Archipelago, Colombian Caribbean Mariana Gnecco <i>Corales de Paz, Colombia</i>
	15:15-15:30	Talk 1-8	Exploring the role of water flow in the response of corals to ocean acidification scleractinian Catarina Martins <i>Justus Liebig University, Giessen, Germany</i>
	15:30-15:45	Talk 1-9	Symbiodiniaceae community dynamics in the starlet coral (<i>Siderastrea siderea</i>) during two experimental bleaching and recovery events Ana M. Palacio-Castro <i>University of Miami, United States</i>
	15:45-16:00	Talk 1-10	Ocean acidification causes mortality in the medusa stage of the cubozoan <i>Carybdea xaymacana</i> Pierre Chuard <i>McGill University, Canada</i>
	16:00-16:30		Coffee break and poster session ICMS
	16:30-16:45	Talk 1-11	Applied hologenomics: Performance and Potential Applications in Coral Holobiont Research Juan Sebastián Celis <i>Justus Liebig University, Giessen, Germany</i>
	16:45-17:00	Talk 1-12	Inhabiting the technosphere: the encroachment of anthropogenic marine litter in Neotropical mangrove forests and its use as habitat by macrobenthic biota José M. Riascos <i>Universidad del Valle, Colombia</i>
	17:00-18:00		Chatting with the keynote speakers
Marine Environmental Change Chair: Fernando Zapata			

	Time	Talk number	Marine Environmental Change and Marine Resources
Marine Environmental Change Chair: Fernando Zapata	8:00-9:00	Plenary 3	Patricia Miloslavich University of Tasmania, Australia / Universidad Simón Bolívar, Venezuela
	9:00-9:15	Talk 2-1	Microplastic: the Trojan horse of the ocean that might affect coral health Angel Franco <i>Justus Liebig University, Giessen, Germany</i>
	9:15-9:30	Talk 2-2 DICM	Reconstruction of the origin of the organic matter deposits in the gulf of Urabá Alex Fernando Rúa Cardona <i>Universidad de Antioquia, Colombia</i>
	9:30-9:45	Talk 2-3	Characterization of deep-sea chemosynthetic communities in the Southern Colombian Caribbean Luisa F. Dueñas <i>Anadarko Colombia Company, Colombia</i>
	9:45-10:00	Talk 2-4	3D scanning as novel method for measuring stress in corals Jessica Reichert <i>Justus Liebig University, Giessen, Germany</i>
	10:00-10:15	Talk 2-5	Hydropower dam implications and saltwater intrusion on a tropical estuary in the southern gulf of Mexico Juan Carlos Alcerreca-Huerta <i>Consejo Nacional de Ciencia y Tecnología - El Colegio de la Frontera Sur, Mexico</i>
	10:15-10:30		Coffee break
	10:30-10:45	Talk 2-6	Spatio-temporal changes in the Mexican Caribbean coral reef communities over the last 4 decades Ameris Ixchel Contreras-Silva <i>University of Bremen, Germany</i>
	10:45-11:00	Talk 2-7	Ecologic integrity and biodiversity of reef ecosystems in oceanic islands of Colombia in the Caribbean: Serranilla Cay Alexandra Pineda-Muñoz <i>Seaflower Research and Conservation Foundation, Colombia</i>
	11:00-11:15	Talk 2-8	Mangrove macroecology in Colombia: understanding geographical patterns to anticipate responses to climatic changes Juan Blanco-Libreros <i>Universidad de Antioquia, Colombia</i>
	11:15-11:30	Talk 2-9	Mediterranean aquaculture impact on subtidal macroalgae community: a case study from the Aegean Sea (Greece) Camilo Escobar Sierra <i>University of the Highlands and Islands, Colombia</i>
	11:30-11:45	Talk 2-10	Gorgonian corals ecology and threats: invasive species and disease outbreaks in the Tropical Eastern Pacific Elena Quintanilla <i>Universidad de Los Andes/Justus Liebig University Giessen, Spain</i>
	11:45-12:00	Talk 2-11	Evaluation of octocoral ecophysiological response under ocean warming scenarios Susana Marcela Simancas Giraldo <i>Bremen Universität, Colombia</i>
	12:00-12:30	Plenary 4	Jai Joon Jang International Counsel of the CCO, Korea
12:30-14:00		Free lunch break / Poster session	
14:00-15:00	Plenary 5	Mathias Wolf Leibniz Centre for Tropical Marine Research, Germany	
15:00-15:15	Talk 2-12	The effect of sewage discharge on the microbial community of mangrove ecosystems Ingrid Paola Figueroa Galvis <i>Antonio Nariño University, Colombia</i>	
15:15-15:30	Talk 2-13 DICM	Advances in Ballast water treatment in a pilot scale Juan Guillermo Garcia Garay <i>Universidad Jorge Tadeo Lozano, Colombia</i>	
Marine Resources Chair: Monica Puyana	15:30-15:45	Talk 2-14	Combining scientific and local knowledge to estimate vulnerability of data-poor stocks Andrea Jara <i>Oregon State University, Colombia</i>
	15:45-16:00	Talk 2-15	Gregarious behavior of the small pelagic fish in the gulf of California using acoustic methods Airam Nauzet Sarmiento Lezcano <i>Centro Interdisciplinario de Ciencias Marinas, España</i>
	16:00-16:30		Coffee break and poster session ICMS
	16:30-16:45	Talk 2-16	Breeding, larval development, and growth of juveniles of edible echinoderms for aquaculture and repopulation in Ecuador Jorge Ignacio Sonnenholzner Varas <i>Escuela Superior Politécnica del Litoral (ESPOL), Ecuador</i>
	16:45-17:00	Talk 2-17	Insights for sustainable development through Salinity Gradients Energy-based technology in small coastal communities. Mateo Roldan Carvajal <i>Universidad Nacional de Colombia - Sede Medellín, Colombia</i>
	17:00-18:00		Chatting with the keynote speakers

	Time	Talk number	Marine Resources and Oceanography
Marine Resources Chair: Monica Puyana	8:00-9:00	Plenary 6	Alec Torres Freyermuth UNAM, Mexico
	9:00-9:15	Talk 3-1 DICM	Deep-water crustaceans captured with traps, like a potential alternative fishery in the Colombian Caribbean Daniel Giovanni Pérez Ferro <i>Universidad de Bogotá Jorge Tadeo Lozano, Colombia</i>
	9:15-9:30	Talk 3-2 DICM	Advances on salinity gradient energy in Latin America Oscar Alvarez Silva <i>Universidad del Norte, Colombia</i>
	9:30-9:45	Talk 3-3	Impacts of coastal development on the resilience of coral reefs: Twenty years of monitoring from the Dominican Republic Iker Irazabal <i>Reef Check Dominican Republic, Dominican Republic</i>
	9:45-10:00	Talk 3-4	Acoustic telemetry as a tool for the design and evaluation of MPAs David Abecasis <i>CCMAR/University of the Algarve, Portugal</i>
	10:00-10:15	Talk 3-5	Designing a Marine Protected Area in the Guatemalan Pacific Pilar de Maria Velasquez Jofre <i>Center for Conservation Studies (CECON-USAC) Guatemala</i>
	10:15-10:30		Coffee break
	10:30-10:45	Talk 3-6 DICM	Prediction and seasonality of potential fishing areas for dorado (<i>Coryphaena hippurus</i>) and tuna (Scombridae) and their relationship with environmental changes in the Colombian Pacific and nearby areas. Estefania Isaza-Toro <i>Universidad del Valle, Colombia</i>
	10:45-11:00	Talk 3-7	Community Structure of Gelatinous Zooplankton (Meduzosoa and Tunicata) of Tropical East Pacific and Antarctic Peninsula, Austral Summer 2014-2015. Luisa Fernanda Restrepo Avendaño <i>Universidad de Antioquia, Colombia</i>
	11:00-11:15	Talk 3-8	Multiannual analysis of the fishing impact of the white sea urchin <i>Lytechinus variegatus</i> (Lamarck, 1816) (Echinoidea: Toxopneustidae) in the south of Margarita island, Venezuela Carolina Bracho <i>Marine Science Institute-Labomar. Federal University of Ceará, Brasil</i>
	11:15-11:30	Talk 3-9	Environmental education and its application in marine sciences Sharon Acevedo <i>Universidad Jorge Tadeo Lozano, Colombia</i>
11:30-11:45	Talk 3-10 DICM	Mid to Late Holocene geochemical and diatom based environmental reconstruction of Colombian Coastal Lagoons Yuliana Serna <i>Universidad del Norte, Colombia</i>	
11:45-12:00	Talk 3-11 DICM	Relationship between fish catch and environmental variables reveals the importance of mangroves to small-scale fisherie in Urabá gulf, Colombian Caribbean. Alejandro Sandoval Londoño <i>Universidad de Antioquia, Colombia</i>	
12:30-13:30		Free lunch break and III LatWaves Registration	
13:30-14:00		III LatWaves Opening Andres Osorio-Arias & Alex Babanin	
14:00-15:00	Plenary 7	Javier López Lara Universidad de Cantabria – IHCantabria, Spain	
15:00-15:15	Talk 3-12	Building a network for the characterization of marine ecosystems in Colombia by using modern technologies Paula Zapata-Ramírez <i>Universidad Pontificia Bolivariana, Colombia</i>	
15:15-15:30	Talk 3-13	Carbon stocks in the Pacific Colombian mangroves Alejandra Monsalve <i>Universidad Nacional de Colombia Sede Medellín, Colombia</i>	
Oceanography Chair: Andrés Franco	15:30-15:45	Talk 3-14	On the exchange of carbon dioxide between the ocean and atmosphere Francisco J. Ocampo Torres <i>CICESE, Mexico</i>
	15:45-16:00	Talk 3-15	Effect of small scale transport processes on phytoplankton distribution in coastal seas. Alejandro Orfila Forster <i>IMEDEA-CSIC, España</i>
	16:00-16:30		Coffee break and poster session ICMS
	16:30-16:45	Talk 3-16 DICM	Sedimentary features and seasonal benthic metabolism in a tropical coastal area (Taganga bay, Colombian Caribbean) impacted by a sewage outfall Diana Marcela Arroyave Gómez <i>Universidad Nacional de Colombia Sede Medellín, Colombia</i>
	16:45-17:00	Talk 3-17 DICM	Methodological approximation to the assessment of biological production and destruction of calcium carbonate in coral reefs of the Colombian Pacific Edgardo Londoño-Cruz <i>Universidad del Valle, Colombia</i>
	17:00-17:17		Advanced Instruments to measure currents and waves Diego Bitencourt NORTEK (Sponsor)
	17:15-18:00		LabTour (sponsored by Enrique Gardeta, +D)
	18:00-19:00		Welcoming Coctail

Oceanography Chair: Andrés Franco	Time	Talk number	Oceanography and III LatWaves
	8:00-8:30	Plenary 8	Alex Babanin University of Melbourne, Australia
	8:30-9:00	Plenary 9	Erick Rogers US Naval Research Laboratory
	9:00-9:15	Talk 4-1 DICM	Multitemporal coastal changes in the Colombian Pacific: Mangroves and intertidal sediments using satellite imagery and Unmanned Aerial Vehicles (UAV's) Juan Mejía-Rentería <i>Universidad del Valle, Colombia</i>
	9:15-9:30	Talk 4-2 DICM	Submerged structure effects on oscillatory flows (Wave-seagrass interaction) Alejandro Cáceres <i>Universidad Nacional de Colombia, Colombia</i>
	9:30-9:45	Talk 4-3 DICM	Development and implementation of a stochastic dynamic model for search and rescue operations in the Colombian Caribbean Sea Carlos Augusto Romero Balcucho <i>Armada República de Colombia, Colombia</i>
	9:45-10:00	Talk 4-4	Insights of ocean acidification processes in Colombia Laura C. Paiba García <i>University of Southampton, Colombia</i>
	10:00-10:30		Coffee break and poster session
	10:30-10:45	Talk 4-5	Estimating the Potential of Deep Ocean Water in the Caribbean Jessica Arias-Gaviria <i>Universidad Nacional de Colombia, Colombia</i>
	10:45-11:00	Talk 4-6 DICM	Analysis of short-term processes interactions on coastline evolution Adriana del Carmen Puello Alcázar <i>Universidad Nacional de Colombia Sede Medellín, Colombia</i>
	11:00-11:15	Talk 4-7 DICM	Sea surface temperature inter-annual variability in the northeastern tropical Pacific and its relationship with El Niño and La Niña conditions Juan Leonardo Moreno Rincón <i>Universidad Jorge Tadeo Lozano, Colombia</i>
	11:15-11:30	Talk 4-8 DICM	Seasonal sea level variation in the San Andres, Providencia and Santa Catalina Archipelago, Caribbean Sea Rafael Ricardo Torres Parra <i>Universidad del Norte, Colombia</i>
	11:30-11:45		Coffee break
	11:45-12:00	Talk 4-9 DICM	Analysis of the 3D behavior of currents in the north coast of Colombia Vilma Viviana Ojeda Caicedo <i>Universidad del Norte, Colombia</i>
	12:00-12:15	Talk 4-10 DICM	Oceanography, fish larvae and artisanal fisheries, knowledge for the protection of a resource- Diego Fernando Córdoba Rojas <i>Universidad del Valle, Colombia</i>
	12:15-12:30	Talk 4-11	Hydrodynamic connectivity in the Seaflower Biosphere Reserve system and its potential impact on biological connectivity Luisa Lopera <i>Universidad Nacional de Colombia, Colombia</i>
12:30-14:00		Free lunch break / Poster session	
14:00-15:00	Plenary 10	Takuji Waseda The University of Tokyo, Japan	
	Plenary 11	Francisco Ocampo-Torres CICESE, Mexico	
15:00-15:20	Talk 4-12	Genetic Algorithms to determine JONSWAP spectra parameters Juan Rueda Bayona <i>Nueva Granada Military University, Colombia</i>	
15:20-15:40	Talk 4-13	Statistical analysis of the evolution of nonlinear wave fields to assess the occurrence of extreme ocean waves Leandro Fernández <i>Santo Tomás University, Colombia</i>	
15:40-16:00	Talk 4-14	Identification and Separation of Independent Wave Events in The Application of Extreme Value Analysis Edwin Jácome <i>Escuela Politécnica Nacional, Ecuador</i>	
16:00-16:40		Coffee break and poster session	
16:40-17:00	Talk 4-15	Atmospheric Effects on Gravity Waves in the Mexican Pacific Itxaso Odériz Martínez <i>UNAM, Mexico</i>	
17:00-17:20	Talk 4-16	Wave generation by wind: On coupling between linear and nonlinear effects Lev Shemer <i>Tel Aviv University, Israel</i>	
17:20-17:40	Talk 4-17	An experimental study on surface wave modifications by ice covers David Wang <i>Naval Research Laboratory, USA</i>	
17:00-18:00	Talk 4-18	Effects of surface waves on the upper ocean boundary layer Daniel Pélaez-Zapata <i>CICESE, Mexico</i>	

Time	Talk number	III LatWaves
8:00-8:30	Plenary 12	Maria Maza IH Cantabria, Spain
8:30-9:00	Plenary 13	Nelson Violante-Carvalho Federal University of Rio de Janeiro, Brazil
9:00-9:20	Talk 5-1	Laboratory Investigation of Wave Energy Dissipation over Submerged Coral Reef Structures Brian Haus <i>University of Miami, USA</i>
9:20-9:40	Talk 5-2	Assessment of wave dissipation by bottom friction on the Río de la Plata Estuary Rodrigo Alonso <i>Universidad de la República, Uruguay</i>
9:40-10:00	Talk 5-3	Wave energy attenuation as coastal protection ecosystem provided by coral reef barrier at Isla Cayos de Serranilla, Seaflower marine Biosphere Reserve, Colombian Caribbean Julian Prato <i>Universidad Nacional de Colombia, Colombia</i>
10:00-10:40		Coffee break and Poster session
10:40-11:00	Talk 5-4	A Wave-Current-Mixed-Sediments Model of the Belgian Coast and the Scheldt Estuary Juan Sebastian Escobar Ramos <i>KU Leuven, Belgium</i>
11:00-11:20	Talk 5-5	Quantification of the evolution of sandy beaches applying laser scanning technology with inverse Bruun's Rule Maris Eelsalu <i>Tallinn University of Technology, Estonia</i>
11:20-11:40	Talk 5-6	Investigation about Swell Arrival and Decay Along the South and Southeast Brazilian Coast: A Preliminary Approach Júlia Kaiser <i>COPPE - UFRJ, Brazil</i>
11:40-12:00	Talk 5-7	Shoreline prediction over multiple temporal scales: models, modelling and prediction Jennifer Montaña <i>The University of Auckland, New Zealand</i>
12:00-13:00		Free lunch break
13:00-13:20	Talk 5-8	Transport due to transient progressive waves Jorge Ramírez <i>Universidad Nacional de Colombia, Colombia</i>
13:20-13:40	Talk 5-9	Spatio-temporal Effects of Enso Events on the Wave Climate of the Caribbean Sea Marco Vega Fuentes <i>Universidad del Norte Colombia, Colombia</i>
13:40-14:00	Talk 5-10	Colombian Caribbean water column dynamic processes - A view from in-situ measurements and numerical models. Yuley Cardona National <i>Universidad Nacional de Colombia, Colombia</i>
14:00-15:00	Plenary 14	Roberto Padilla NOAA, USA
	Plenary 15	Jean-Raymond Bidlot European Centre for Medium-range Weather Forecast, UK
15:00-15:20		Coffee break and Poster session
15:20-15:40	Talk 5-11	Modelling and analysis of multiple wave system conditions in the Eastern Equatorial Pacific Ocean Jesús Portilla <i>Escuela Politécnica Nacional, Ecuador</i>
15:40-16:00	Talk 5-12	The NCEP Global Wave Forecasting System Deanna Spindler <i>NCEP/EMC, USA</i>
16:00-16:20	Talk 5-13	Experiences on the Application of CFD Models for Waves Action Study Federico Haspert <i>INA, Argentina</i>
16:20-16:40		Coffee break
16:40-17:00	Talk 5-14	Teleconnections and Extreme Ocean States in the Northeast Atlantic Ocean Frederic Dias <i>University College Dublin, Ireland</i>
17:00-17:20	Talk 5-15	Interannual variability of ocean wave in the Colombian Pacific Basin Ana Caicedo-Laurido <i>Centro de Investigaciones oceanográficas e Hidrográficas del Pacífico (CCCCP), Colombia</i>
17:00-18:00	Plenary 16	Discussion Panel Moderators: Andres F. Osorio and Alex Babanin