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***EDWIN ALFONSO-SOSA***

***Quebradillas, Puerto Rico***

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**EDUCATION**

- **Ph.D. Marine Science (2001)** Physical Oceanography Program, University of Puerto Rico at Mayagüez (GPA: 4.00)

Thesis: Temporal Variability of Phytoplankton Primary Production in CaTS (Caribbean Time Series): Emphasis in the Impact of the Internal Tides on the Productivity Estimates

- **M.S. Marine Science (1995)** Physical Oceanography Program, University of Puerto Rico at Mayagüez (GPA: 3.50)

Thesis: The Coastal Current Regime in Añasco Bay during a One Year Period

- **B.S. Theoretical Physics (1990)** University of Puerto Rico at Mayagüez (*Magna Cum Laude*, GPA:3.46)

**AWARDS AND SCHOLARSHIPS**

- **JUN 2002-JUN 2003** American Society for Engineering Education (ASEE)/Office of Naval Research (ONR) Postdoctoral Fellowship
- **AUG 2001-DEC 2001** Alliance for Graduate Education and the Professorate (AGEP) Fellowship from the Minority Graduate Education Program (MGE)
- **JUN-JUL 2001** NASA Preparatory Grant Student Fellowship
- **JAN-MAY 2001** NASA EPSCoR Graduate Student Fellowship
- **OCT 2000-JAN 2001** UPR Graduate Student Fellowship
- **SEP 2000** NASA (Estimation of Ocean Primary Production)
- **JAN-MAY 2000** NASA EPSCoR Graduate Student Fellowship
- **AUG 1999** NSF/MGE \$300 dollars award
- **1992-1994** NASA Graduate Student Researchers Program
- **MAR 1985** One of the 40 finalists in the National Westinghouse Science Talent Search, Washington D.C.
- **MAY 1985** Winner of Special Award: U.S. Air Force, International Science Fair, Shreveport, Louisiana
- **MAY 1984** Winner of Special Award: Bausch & Lomb Company, International Science Fair, Columbus, Ohio
- **APR 1984** Winner of the Puerto Rico State Science Fair

## TEACHING EXPERIENCE

- **2004-Present** Director of Ocean Physics Education, Inc., Quebradillas, Puerto Rico
- **01/1997-12/1997; 09/2003-05/2009;** Assistant Professor, Department of Science and Technology, Interamerican University of Puerto Rico at Arecibo, Puerto Rico
  - PHYS 3002- Fundamentals of Physics II
  - EGCT 3030- El Ser Humano y el Mundo Físico
- **08/1998-12/1998** Biology and Physics Teacher, Colegio Nuestra Señora del Carmen at Hatillo, Puerto Rico

## RESEARCH EXPERIENCE

- **06/2002-06/2003** ASEE/ONR Post-doctoral Research Fellow, Naval Research Laboratory, Stennis Space Center, Mississippi
- **06/1995-01/1997** Research Associate, Department of Marine Sciences, University of Puerto Rico at Mayagüez, Puerto Rico

## PUBLICATIONS

- Alfonso-Sosa, E., 2015. *Seiches Costeros de Puerto Rico*. [E-book](#) published by Ocean Physics Education.
- Alfonso-Sosa, E., 2015. *Marea Interna y Olas Solitarias Internas*. [E-book](#) published by Ocean Physics Education.
- Alfonso, E., 2008. *El Mundo Físico: Lecturas cortas sobre los procesos físicos alrededor del ser humano*. Electronic Publication in [CD](#).
- Alfonso, E., 2002. *Variabilidad temporal de la producción primaria fitoplanctónica en la estación CaTS (Caribbean Time-Series Station): Con énfasis en el impacto de la marea interna semidiurna sobre la producción*. Ph. D. Dissertation. Department of Marine Sciences, University of Puerto Rico, Mayagüez, Puerto Rico. UMI publication AAT 3042382, 407 pp.
- Lopez, J. M., **Alfonso-Sosa, E.**, Dieppa, A. (2000) Annual Trajectory of Daily Integrated Primary Production at CaTS. In: Proceedings of Ocean Optics XV. October 16<sup>th</sup>-20<sup>th</sup> 2000. *Muséum Océanographique du Monaco*.

## NEWSPAPER ARTICLES

- Un mar de fenómenos oceánicos en Puerto Rico. *La Regata*, Año 2017, Vol. 20 No. 2, p. 29
- Meteotsunamis golpean a Puerto Rico, *La Regata*, Año 2014, Vol. 16 No. 1, p. 28
- Seiche de Magueyes, solitones de Aves, pluma del río Orinoco y la Luna. *La Regata*, Año 2013, Vol. 15 No. 10, p. 9
- Misterioso Fenómeno en el Pasaje de la Mona, *La Regata*, Año 2013, Vol. 15 No. 7, p. 10

- Gigantescas olas internas golpean las pendientes submarinas del suroeste de Puerto Rico. La Regata, Año 2012, Vol. 14 No. 9, p. 5

## PRESENTATIONS, POSTERS AND SEMINARS

- Alfonso-Sosa, E. "Changes in the Duration and Peak of the Wave Season on Puerto Rico." (poster) CariCOOS 2016 General Assembly, Puerto Rico Convention Center, April 28<sup>th</sup> 2016. [PDF](#)
- Alfonso-Sosa, E. "[CariCOOS's Buoy detects an Air Pressure Disturbance before Meteotsunami hits Puerto Rico](#)" (poster) CariCOOS 2015 General Assembly, Club Náutico de San Juan, Puerto Rico. March 20, 2015.
- Alfonso, E. "Current Applications for an Array of Water Level Gauge Stations" The IV Caribe EWS Short Course on Sea Level, Station Installation, Maintenance, and Leveling, Quality Control and Data Analysis, University of Puerto Rico, Mayaguez, November 6, 2014.
- **Alfonso, E.,** Z. R. Hallock "Response of the nonlinear-nonstationary internal tide to the spring-neap cycle of the barotropic tide" The Oceanographic Society Annual Meeting, New Orleans, 2003.
- **Alfonso, E.,** J. Capella "Evidence of neap tidal forcing as a factor for the occurrence of large-amplitude coastal seiches" (poster) 14<sup>th</sup> EPSCOR Annual Meeting, Dorado, Puerto Rico. May, 2002.
- **Alfonso, E.,** J. Capella "Internal Tide-induced variations in primary productivity and optical properties in the Mona Passage, Puerto Rico." ASLO/AGU Oceans 2002, Hawaii Convention Center, Honolulu, Hawaii. February 11-15, 2002.
- Capella, J., **E. Alfonso** "Coastal seiches, internal tide generation and diapycnal mixing off Puerto Rico". ASLO/AGU Oceans 2002, Hawaii Convention Center, Honolulu, Hawaii. February 11-15, 2002.
- **Alfonso, E.,** J. Capella, A. Dieppa y J. M. López "Are internal waves altering the ocean carbon cycle" Sigma Xi Poster Day, R.U.M., Mayagüez, Puerto Rico. April 27<sup>th</sup>, 2001.
- **Alfonso, E.,** J. Capella, A. Dieppa y J. M. López "Are internal waves altering the ocean carbon cycle" (poster) 13<sup>th</sup> EPSCOR Annual Meeting, Dorado, Puerto Rico. April 20-22, 2001.
- **Alfonso, E.** "Temporal variability of phytoplankton primary production on the Caribbean Time Series Station (CaTS): with emphasis on the impact of internal waves over their estimates" ASLO 2001 Student Symposium, ASLO 2001 Aquatic Science Meeting, Albuquerque, New Mexico.. February 12-16 2001.
- **Alfonso, E.,** A. Dieppa y J. M. López "Primary productivity measurements at CaTS serial station" Sigma Xi V Poster Night, UPR-Mayagüez, Puerto Rico, April 28<sup>th</sup>, 2000
- **Alfonso, E.,** A. Dieppa y J. M. López "*Medidas de productividad primaria en la estación serial CaTS*" 35<sup>th</sup> ACS Junior Technical Meeting, UPR-Rio Piedras, Puerto Rico, March 11<sup>th</sup>, 2000
- López, J.M., A. Dieppa and **E. Alfonso** "Oceanic Primary Production At The Caribbean Time-Series Station (CATS)" Conference on the Transports and Linkages of the Intra-Americas Sea, Cozumel, Mexico, November 1-5, 1997

- López, J.M., A. Dieppa and **E. Alfonso** "Oceanic primary production from photosynthetic parameters and satellite data" Assoc. Island Marine Labs of the Caribbean, San Jose, Costa Rica, July 20-25, 1997
- López, J.M., A. Dieppa and **E. Alfonso**, J.M. Morell and J.E. Corredor "Variability of the Vertical Diffuse Attenuation Coefficient of Light in Tropical Oceanic Waters" The Oceanography Society Meeting, July 7-12, 1996, Amsterdam, The Netherlands.
- López, J.M., A. Dieppa and **E. Alfonso**, R. A. Armstrong, J.M. Morell and J.E. Corredor "Bio-optical Observations of the Eastern Caribbean Sea" ASLO/AGU Joint Ocean Sciences Meeting, Feb 12-17, 1996, San Diego, CA
- López, J.M., A. Dieppa and **E. Alfonso**, "Bio-Optica y Percepción Remota del Mar Caribe" VII Simposio Latinoamericano de Percepción Remota, November 5-10, 1995, Puerto Vallarta, Mexico.
- López, J.M., A. Dieppa and **E. Alfonso**, "Bio-optical Instrumentation and Techniques for the Study of the Oceans" XXI General Assembly of The International Association for the Physical Sciences of the Oceans (IAPSO), Honolulu, 5 - 12 August 1995.

#### **NON-REFEREED PAPERS (ONLINE)**

- Alfonso-Sosa, E., 2020. First Report of a Jet/Plume off Punta Este, Vieques [PDF](#)
- Alfonso-Sosa, E., 2019. Prediction of Midday Lowest Tidal Levels and Exposure of Coral Reefs in La Parguera, Puerto Rico [PDF](#)
- Alfonso-Sosa, E., 2019. La vorticidad en el Mar Caribe Oriental modula la actividad de las olas solitarias internas y de los seiches costeros extremos registrados en el suroeste de Puerto Rico [PDF](#)
- Alfonso-Sosa, E., 2019. Evento extraordinario de 10 días de seiches costeros grandes y extremos en Isla Magueyes: excitados por olas solitarias internas generadas en la Cresta Submarina de Aves [PDF](#)
- Dieppa-Ayala, A., **Alfonso-Sosa, E.**, 2019. Effects of Hurricane Maria over physical parameters (Temp, Salinity, Depth) at four water quality monitoring stations, mangroves, and benthic communities of the Jobos Bay National Estuarine Research Reserve [PDF](#)
- Alfonso-Sosa, E., 2019. Fluctuaciones en la presión atmosférica y cambios en la dirección y rapidez del viento asociados al paso de disturbios atmosféricos fuerzan la generación de la oscilación costera de 1.8 horas entre Isabel Segunda y el Puerto de Fajardo [PDF](#)
- Alfonso-Sosa, E., 2018 Observación de Inestabilidades Kelvin-Helmholtz afuera de la costa suroeste de Puerto Rico. [PDF](#)
- Alfonso-Sosa, E., 2018 Un frente de agua asociado a la pluma del Río Orinoco choca contra las aguas de La Parguera y provoca valores anormales del nivel del mar [PDF](#)
- Alfonso-Sosa, E., 2018 Meteotsunamis registrados en la estación mareográfica de Mar del Plata coinciden con teledetecciones de ondas de gravedad mesosféricas [PDF](#)

- Alfonso-Sosa, E., 2018 Meteotsunamis revelan la intensificación rápida de los huracanes [PDF](#)
- Alfonso-Sosa, E., 2017 Capa de Aerosol Sahariana en el Caribe Nororiental precede la generación de los meteotsunamis en Puerto Rico [PDF](#)
- Alfonso-Sosa, E., 2017. Método para la observación del Océano Índico Tropical mediante una red de estaciones seichelógicas. 17 pp. [PDF](#)  
DOI:10.13140/RG.2.2.10678.50243
- Alfonso-Sosa, E., 2017. Tide-Generated Internal Solitary Waves generated on a large sill of Mascarene Plateau excite Coastal Seiches in Agalega and Rodrigues Islands. 27 pp. [PDF](#) DOI: 10.13140/RG.2.2.21462.45129
- Alfonso-Sosa, E., 2017. Tide-Generated Internal Solitary Waves from the Sumba Strait excite Coastal Seiches in Christmas Island. 19 pp. [PDF](#)
- Alfonso-Sosa, E., 2016. Tidal mixing in the Sumba Strait and internal wave activity detected during strong semidiurnal forcing. [PDF](#)
- Alfonso-Sosa, E., 2016. Fenómenos Físicos Oceánicos en Puerto Rico. [PDF](#)
- Alfonso-Sosa, E., 2016. Tide-Generated Internal Solitary Waves in the Nicobar Islands Passages excite Coastal Seiches in the Maldives Islands. [PDF](#)  
DOI:10.13140/RG.2.2.31764.91528
- Alfonso-Sosa, E., 2016. Sea Level Rise detected in the Atlantic and Caribbean Coast of Puerto Rico. [PDF](#)
- Alfonso-Sosa, E., 2016. Perigean Spring Tides versus Apogean Spring Tides and Their Implication on Pelagic Mixing in the Next 1.4 Billion Years. [PDF](#)
- Alfonso-Sosa, E., 2016. Changes in the Duration and Peak of the Wave Season on Puerto Rico. [PDF](#)
- Alfonso-Sosa, E., 2016. Naples Meteotsunami on January 17 2016. [PDF](#)
- Alfonso-Sosa, E., 2015. Internal Solitary Waves Generated at Banco Engaño, Mona Passage. 12 pp. [PDF File](#)
- Alfonso-Sosa, E., 2015. Topographic Response of a Harbor during a Meteotsunami in the Puerto Rican Archipelago. 43 pp. [PDF File](#)
- Alfonso-Sosa, E., 2014. Meteotsunamis en el Puerto de Fajardo. 10 pp. [PDF File](#)
- Alfonso-Sosa, E., 2014. Reporte final del meteotsunami ocurrido en el Puerto de Fajardo el 8 de agosto del 2014. 15 pp. [PDF File](#)
- Alfonso-Sosa, E., 2014. Wind-driven Western Boundary Ocean Currents in Terran and Superterran Exoplanets. 15 pp. 0.82 MB [PDF File](#)
- Alfonso-Sosa, E., 2014. Tide-Generated Internal Solitons in Bay of Bengal Excite Coastal Seiches in Trincomalee Bay. 16 pp. 1.76 MB [PDF File](#)  
DOI:10.13140/RG.2.2.32105.70242
- Alfonso-Sosa, E., 2014. MODIS Images Catalog of Ceará Solitons Located Offshore of the Amazon River Delta in the Equatorial Atlantic Ocean (2013) 9 pp. [PDF File](#)
- Alfonso-Sosa, E., 2014. Calculating the Speed of a Transatlantic Meteotsunami on June 13 2013. 9 pp. [PDF File](#)
- Alfonso-Sosa, E., 2014. Coastal Oscillations after the Passage of Hurricane Irene. 14 pp. [PDF File](#)

- Alfonso-Sosa, E., 2013. The 1.8-hours Sea-Level Oscillations Recorded at Isabel Segunda, Vieques and Puerto de Fajardo. 22 pp. [PDF File](#)
- Alfonso-Sosa, E., 2013. First MODIS Images Catalog of Aves Ridge Solitons in the Caribbean Sea (2008-2013). [PDF File](#)
- Alfonso-Sosa, E., 2013. Comparison between the Instantaneous Frequencies of the Offshore KdV Soliton Train and of the Coastal Shelf Response. 12 pp. 778 kb [PDF File](#).
- Alfonso-Sosa, E., 2013. Decomposition of a Train of KdV Solitons by Hilbert Huang Transform. 11 pp. 902 kB [PDF File](#).
- Alfonso-Sosa, E., 2013. Dragon's Mouth Outflow Plume as a source of nonlinear internal waves. 6 pp. 983 kB [PDF File](#).
- Alfonso-Sosa, E., 2013. Solitones internos generados en el Banco Engaño. 6 pp. 716 kB [PDF File](#).
- Alfonso-Sosa, E., 2013. Solitones de Aves y Seiches de Magueyes. 10 pp. 973 kB [PDF File](#).
- Alfonso-Sosa, E., 2013. Seichología: Una técnica novel para detectar remotamente cambios en el interior del océano. 12 pp. 1.18 MB [PDF File](#).
- Alfonso-Sosa, E., 2013. ISS-34 Mission Astronauts Photograph Internal Waves off Northern Trinidad. 4 pp. 0.97 MB [PDF File](#).
- Alfonso-Sosa, E., 2012. Solitons and Offshore Natural Gas Drilling Platforms. 3 pp. 644 kb [PDF File](#).
- Alfonso-Sosa, E., 2012. La predictibilidad de los solitones generados en la Cresta Submarina de Aves puede reducir el riesgo de las operaciones marinas en el Mar Caribe Oriental. 2 pp. 478 Kb [PDF File](#).
- Alfonso-Sosa, E., 2012. Estimated Speed of Aves Ridge Solitons Packets by Analysis of Sequential Images from the Moderate Resolution Imaging Spectroradiometer (MODIS) 11 pp. 2.55 MB [PDF File](#).
- Alfonso-Sosa, E., 2012. Ciclo de 6202 días del seiche extremo en Isla Magueyes. 9 pp. 492 KB [PDF File](#).
- Alfonso-Sosa, E., 2012. Efemérides astronómicas para seiches costeros extremos y catastróficos. 14 pp. 1.57 MB [PDF File](#).
- Alfonso-Sosa, E., 2012. Primer reporte de un meteotsunami en la costa caribeña de Puerto Rico. 24 pp. 3.29 MB [PDF File](#).
- Alfonso-Sosa, E., 2011. Relación directa entre la estratificación en la base de la capa mezclada y la respuesta máxima de la plataforma insular en el suroeste de Puerto Rico. Reprint 14009, Marine Science Collection, UPR-RUM General Library. 19 pp. 3.69 MB [PDF File](#), Apéndice 1, 7 MB [PDF File](#).
- Alfonso-Sosa, E., 2011. ¿Dónde están los solitones? : mecanismo necesario para explicar los seiches costeros en la Isla Magueyes. Reprint 12851, Marine Science Collection, UPR-RUM General Library. 11 pp. 1.5 MB [PDF File](#)
- Alfonso-Sosa, E., 2009. Pulsación de segundo orden de los constituyentes mareales diurnos explica la modulación de los seiches en Isla Magueyes, Puerto Rico. Reprint 09920, Marine Science Collection, UPR-RUM General Library. 25 pp. 6.23 MB [PDF File](#).

## SCIENCE FICTION NOVELS AND SHORT-STORIES

- Alfonso-Sosa, E., 2018. [Córcega](#). 45 pp.
- Alfonso-Sosa, E., 2018. Córcega Rojo. 18 pp.
- Alfonso-Sosa, E., 2018. Distorsión Oportuna. 19 pp.

## ORGANIZATIONS AND SOCIETIES

- Ocean Physics Education (Director/Founder **2004-Present**)
- Member of American Geophysical Union (**1996-2003**)
- Member of the American Society of Limnology and Oceanography (**2001-2003**)
- American Radio Relay League (**1998**)
- *Legio Mariae* (**2007-2019**)
- Curia Ntra. Señora de Altagracia (vice-president **2010-2013**)

## SPECIAL SKILLS

- Fully Bilingual: Spanish and English. Fluent in both speaking and reading.
- Ocean Nonlinear Signal Processing: Matlab
- Remote sensing techniques
- Oceanographic techniques
- Collection of optical and physical measurements (Radiometers, ADCP's, current meters)

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