JUAN FRANCISCO MARTÍNEZ OSUNA

NATIONALITY   Mexican | ✉ juan.martinez@cmcc.it

EDUCATION: 2017 – 2019. Universidad Autónoma de Baja California (UABC), Ensenada, B. C., Mx.
Master's degree in Engineering, (Faculty of Engineering, Architecture and Design).

1997 – 2002. Universidad Autónoma de Baja California (UABC), Ensenada, B. C., Mx.
Degree in Electronic Engineering, (Faculty of Engineering).

EMPLOYMENT EXPERIENCE:

Feb 2023 / Today (Italy)
Coordinated and Continuous Collaboration
CMCC Foundation, OPA (Ocean Predictions and Applications) Division.
Design and integration of oceanographic instrumentation as well as data handling.
Support in the development and planning of research projects.
Installation of data acquisition systems and oceanographic buoys in situ.

Jun 2012 / Aug 2022 (México)
Associate Technician (2012-2015) / Head Technician (2016-2022).
CICESE, Physycal Oceanography Department, Division of Oceanology.
Tide Gauge Network technical area manager.
Design and instrumentation of environmental variables observatories. Design and develpment of electronic systems and software for acquisition, pre-processing, storage and transmission of data of different oceanographic and meteorological sensors. Design and development of applications based on C++, Python and GNU/Linux tools. Design and implementation of the photovoltaic electrification systems for autonomous operation. Field technician for installation and maintenance of the different observatories as well as data handling.

Head Technician.
Consorcio de Investigación del Golfo de México (CIGoM / CICESE).
Oceanographic Observation Platforms.
Design and instrumentation of coastal oceanographic and marine meteorological buoys as well as EC towers. Design and implementation of the photovoltaic electrification systems for autonomous operation. Field technician to support installation of EC towers onshore and buoys deployment in the open ocean as well as data handling.

Aug 2009 / May 2012 (México)
Design Engineer
Centro de investigación Científica y de Educación Superior de Ensenada (CICESE).
Sea level monitoring and tsunami effects on the Pacific coasts.
Design of data-acquisition cards, as well as data processing, data storage, and wireless transmission. Use of embedded systems. Design and development of applications based on C++ and GNU/Linux tools. Installation and maintenance of the tide-gauges in-situ.

Design Engineer
Centro de investigación Científica y de Educación Superior de Ensenada (CICESE).
Dendro winds project.
Support in the design and instrumentation of a tower for wind speed and wind direction monitoring as well as inclination and acceleration sensors. Field technician for data handling and system maintenance.

Aug 2007 / Jul 2009 (México)
Design Engineer
Centro de investigación científica y de Educación Superior de Ensenada (CICESE).
TER-MAR Fluxes project.
Monitoring of meteorological and edaphic variables for the study of CO_2 sources and sinks in the area of Ensenada and surroundings.
Design of data-acquisition cards, as well as data processing, data storage, and wireless transmission. Use of embedded systems. Design and development of applications based on C++ and GNU/Linux tools. Software upgrade and implementation of new sensors for the towers. Field technician for data collection and tower maintenance as well as data handling.

Sep 2005 / Apr 2006 (México)
Design Engineer.
Centro de investigación científica y de Educación Superior de Ensenada (CICESE)
TER-MAR Fluxes project.
Design and implementation of a modular data acquisition system based on the ADuC848 microcontroller for edaphic and meteorological sensors installed in EC towers.

WORKSHOPS:

- 2019, CEMIE - Ocean International Workshop, CoZCyT, Zacatecas, México.
Technologies and strategies for electrical interconnection of Ocean Energies for the Mexican territorial sea.

- 2018, Lesson at Physical Oceanography Department, CICESE, Ensenada, México.
Ocean Surface Wave Dynamics and Applications to Energy Conversion (OSWD2018).

- 2015, Course taught by personnel of LICOR Biosciences, CICESE, Ensenada, México.
Eddy Covariance Training Course.

- 2013, Course taught by personnel of LICOR Biosciences, ITSON, Sonora. México.
LI-COR Eddy Covariance Workshop.

- 2012, Course taught by personnel of CICESE, CICESE, Ensenada, México.
Intermediate Python (Introduction to Scientific Modules).

- 2012, Course taught by personnel of CICESE, CICESE, Ensenada, México.
Introduction to Python programming.

- 2008, XV Engineering Conference, UABC, Ensenada, México.
Data acquisition system based on ADuC848 microcontroller and Linux embedded systems,

ACADEMIC ACTIVITIES:

2019 - Internship Supervisor - Undergraduate Student (April - October)
2017 - Social Service Supervisor - High School Student (January - April)
2015 - Subject teacher at CNyN, UNAM – Ensenada, México (August – December)
    Probability and Statistics (Workshop) - 3rd semester.
2015 - Subject teacher at CNyN, UNAM – Ensenada, México (January - July)
    Mathematical Methods II (Workshop) - 4th semester.
2014 - Subject teacher at CNyN, UNAM – Ensenada, México (August – December)
    Probability and Statistics (Workshop) - 3rd semester.
2011 - Social Service Supervisor - High School Student (March - July)
2009 - Social Service Supervisor - Undergraduate Student (August - December)
2009 - Advising on scientific stay - High school student.

PUBLISHED ARTICLES:

Juan F. Martínez-Osuna, Francisco J. Ocampo-Torres, Lucía Gutiérrez-Loza, Ernesto Valenzuela, Angel Castro, Rodrigo Alcaraz, Carlos Rodríguez, Luis R. Ulloa. **Coastal buoy data acquisition and telemetry system for monitoring oceanographic and meteorological variables in the Gulf of Mexico**, Elsevier – Measurement, 183. **2021.**

Angel Castro, **Juan F. Martínez-Osuna**, Raúl Michel, Martín Escoto-Rodríguez, Stephen H. Bullock, Alejandro Cueva, Eulogio López-Reyes, Janet Reimer, Mario Salazar, Samuel Villareal, Rodrigo Vargas. **A low-cost modular data-acquisition system for monitoring biometeorological variables,** Elsevier - Computers and Electronics in Agriculture, 141, **2017**.

Samuel Villarreal, Rodrigo Vargas, Enrico A. Yepez, Jose S. Acosta, Angel Castro, Martin Escoto-Rodriguez, Eulogio Lopez, **Juan Martinez-Osuna,** Julio C. Rodriguez, Stephen V. Smith, Enrique R. Vivoni, Christopher J. Watts. **Contrasting precipitation seasonality influences evapotranspiration dynamics in water-limited shrublands,** Journal of Geophysical Research, 121, **2016.**

Stephen H. Bullock, **J. Francisco Martínez-Osuna**, Eulogio López-Reyes and José L. Rodríguez-Navarro. **Bending of Pinus jeffreyi in response to wind,** Forest Systems, 24, **2015**.

Janet J. Reimer, Rodrigo Vargas, Stephen V. Smith, Ruben Lara-Lara, Gilberto Gaxiola-Castro, J. Martín Hernández-Ayon, Angel Castro, Martin Escoto-Rodriguez, **Juan Martínez-Osuna**. **Air-sea CO2 fluxes in the near-shore and intertidal zones influenced by the California Current,** Journal of Geophysical Research: OCEANS, 118, **2013**.

POSTERS AND ORAL CONTRIBUTIONS:

A. Castro, C. Rodríguez-Hidalgo, **J.F. Martínez-Osuna**, H. García-Nava, F.J. Ocampo-Torres, B. Esquivel-Trava, C. Coronado, **Instrumentation of an Eddie Covariance tower in Todos Santos Bay, Baja California, Mexico**. Congreso Nacional De Física, Tijuana, México. **2021**.

Juan F. Martínez Osuna, Ernesto Ortiz-Huerta., J. Alfredo Ceseña, Ernesto Valenzuela Palacios, Francisco J. Ocampo Torres, **Design, development and implementation of electronic systems for the acquisition, storage and satellite telemetry of data acquired with the Coastal Oceanographic Buoys**. 57va reunión de la Unión Geofísica Mexicana, Jalisco, México, **2017**.

Juan F. Martínez Osuna, Ernesto Ortiz-Huerta., J. Alfredo Ceseña, Ernesto Valenzuela Palacios, Francisco J. Ocampo Torres, **Design, development and implementation of electronic systems for the acquisition, storage and satellite telemetry of data acquired with the Coastal Oceanographic Buoys**. 2da reunión anual del CIGOM, Ensenada, México, **2017**.

Juan F. Martínez Osuna, Rodrigo Alcaraz Garay, Gabriela García Rubio, Lucía Gutierrez Loza, Francisco Javier Ocampo Torres, **Automatic cleaning system for optimizing the optics of the infrared gas analyzer IRGA - LI7500**. 55va reunión de la Unión Geofísica Mexicana, Jalisco, México, **2015**.

Alejandro Cueva, Carlos Aguirre Gutiérrez, Stephen H. Bullock, Ángel Castro, Martín Escoto-Rodríguez, Eulogio López-Reyes, **Juan F. Maríñez Osuna**, Stephen Smith, Rodrigo Vargas, Samuel Villareal-Rodríguez. **Biophysical controls on carbon fluxes in a semiarid chaparral with Mediterranean climate.** V Congreso Mexicano de ecología, San Luis Potosi, México, **2015**.

Janet J. Reimer, Alejandro Cueva, Carmen Bazán-Guzmán, Ángel Castro, Martín E. De la Cruz-Orozco, Martín Escoto-Rodríguez, Gilberto Gaxiola-Castro, J. Martín Hernández-Ayón, Rubén Lara-Lara, **Juan Martínez-Osuna**, Stephen V.-Smith, Rodrigo Vargas. **Random error analysis of pCO2 and FCO2 related to seasonal upwellings in the eastern boundary current of Baja California: from "uncertainty" to "certainty".** XIV reunión de IMECOCAL, Ensenada, México, **2013**.

Carbon fluxes in the Mediterranean shrubland of Baja California using the turbulent correlation technique, 1ᵉʳ Simposio Mexicano del Carbono, **2009**.

Juan F. Martínez Osuna, Martín Escoto-Rodríguez, Stephen H. Bullock.
Scientific Dissemination of the Project TER- MAR fluxes, 1ˢᵗ San Diego Science Festival, CA. US), **2009**.

Carbon fluxes in the Mediterranean shrubland of Baja California using the turbulent correlation technique, Congreso Mexicano de ecología, Morelia Mex., **2008**.

Angel Castro, Martín Escoto, **Juan Martínez**, Raúl. Michel, et al. **Eddy-flux Correlation Towers: An economical alternative**, XXII Congreso Nacional de la Sociedad Mexicana de Instrumentación, Monterrey, México, **2007**.

Angel Castro, Raúl Michel, **Juan Martínez**, Martín Escoto, Steve Smith, **System for the measurement of turbulent fluxes for the determination of sources and sinks of CO2**, XXI Congreso Nacional de la Sociedad Mexicana de Instrumentación, Ensenada, México, **2006**.

MANUALS, GUIDES AND TECHNICAL REPORTS:	**J. F. Martínez Osuna.** Preparation of user manuals for design, programming and configuration of the environmental variables observatories designed at Sea Level Laboratory of CICESE for the **Tidal Gauge Network**.

Contribution in the development of technical reports for projects related to **Centro Mexicano de Innovación en Energía - Océano** (CEMIE - Ocean) within action line O-LE3: **Natural laboratory for ocean renewable energy research, innovation and technology development, specialized site for testing ocean energy converter devices.**
L. Gutiérrez-Loza, F. J. Ocampo-Torres, **J. F. Martínez-Osuna**, E. A. Valenzuela-Palacios. Technical report: ***"Informe: Datos oceanográficos obtenidos en el Golfo de México con las Boyas Oceanográficas Costeras (BOC) durante el periodo de junio de 2016 a febrero 2017".***

L. Gutiérrez-Loza, **J. F. Martínez-Osuna**, E. Rivera-Lemus, R. Alcaráz-Garay y F. J. Ocampo Torres. Contribution in the development of technical data sheets for each buoy of the project **Oceanographic Observation Platforms** of the **Consorcio de Investigación del Golfo de México** (CIGoM).

J. F. Martínez Osuna. Technical Report: ***"Sistema de adquisición, almacenamiento y transmisión satelital, en tiempo real, de datos provenientes de sensores instalados en las Boyas Oceanográficas Costeras (BOC)".***
Design, programming and configuration of the first version of the electronic systems of the Coastal Oceanographic Buoys.

E. Rivera-Lemus, L. G. Álvarez, **J. F. Martínez-Osuna**.
Technical Report: ***"Observaciones de viento en la costa de San Felipe (Baja California) de octubre del 2010 a abril del 2013".***
Data report that is part of the research project on the meteorological circulation that is influenced by forcings from high and low pressure centers in San Felipe B. C. México.

LANGUAGES:	Spanish, Native Language. English, Intermediate to advance. Italian: A2.