



**[Bio sketch: August 28, 2020]**

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**Names and surnames:** JORGE Luis MIREZ Tarrillo.

**Position:** MSc. & Dr. Physics, Mechanical Electrical Eng. Professor in Universidad Nacional de Ingeniería, Lima, Peru.

**IEEE Senior Member:** (Member N° # 92229483)

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*Jorge L. Mírez was born in Chota City, Peru in 1975. He received the B.S. degree in Mechanical-Electrical Engineering from the National University "Pedro Ruiz Gallo", Lambayeque, Peru, in 1998; M.Sc. in Physics (2011) and Doctor in Physics (2018) both for the National University of Engineering, Lima, Peru. His interest research is smart grid, microgrid, life support systems, emergency and disaster technologies and space technologies. He is IEEE Senior Member. Too he is Chair in Mathematical Modeling and Simulation Numerical Group (GMMNS) and Professor in Faculty of Oil, Gas and Petrochemical Engineering, all in National University of Engineering, Lima, Peru.*

**Profile:** Space/biomedical/electrical engineering passionate, searching for new challenges in Smart Grids/Microgrids, Biomedical knowledge and Space Life Support Systems (both academia and industry) and Ecological systems. I am autodidact, persevering, collaborator, responsible and communicator. **INTERESTS:** Space Technology, Spaceships, Spacesuits, Moon/Mars Base, Control, Data & Signal Analysis/Processing, Optimization, Life Support Systems, Smart Grid/Microgrid, Life Support Systems. **EXPERIENCE:** Matlab/Simulink, Biomedical Equipment, Electrical Network, Steam Water System Low Pressure, Mathematic Modeling, Numerical Simulation, Live Support in Hospitals, simulation of test survival on Mars surface, undergraduate and graduate professor, Research in Basic and Applied Sciences.

#### Education

Institution and Location	Degree	Year	Field of Study
National University of Engineering (UNI), Lima, Peru (in collaboration with Aalborg University, Aalborg, Denmark).	Dr.	2018	Physics Thesis "Control, Optimization and Management of DC Microgrid"
National University of Engineering. Lima, Peru. <a href="http://www.uni.edu.pe">http://www.uni.edu.pe</a>	MSc	2011	Physics Thesis "Mathematic Modeling and Numerical Simulation of AC/DC Microgrid"
National University "Pedro Ruiz Gallo" (UNPRG), Lambayeque, Peru.	Job title	2003	Mechanical Electrical Engineering Thesis "Design of a magnetic descaler for a 50 BHP pirotubular steam generator from Chota's Hospital - Ministry of Health of Peru"
National University "Pedro Ruiz Gallo" (UNPRG), Lambayeque, Peru.	BSc	1998	Mechanical Electrical Engineering

#### Training, Positions and Honors

##### Positions and Employments

2018 – today	Professor in Faculty of Oil, Gas and Petrochemical Engineering. National University of Engineering. Lima, Peru.
2017 – today	Chair of Group of Mathematical Modeling and Numerical Simulation GMMNS <a href="http://www.ctic.uni.edu.pe/index.php/laboratorios/gmmns">www.ctic.uni.edu.pe/index.php/laboratorios/gmmns</a>
2016 - 2018	Professor Courses: Applied Mathematics (using Matlab/Simulink). Master Program of Master in Petroleum and Gas Engineering. National University of Engineering. Lima, Peru.
2015	Professor Courses: Applied Mathematics (using Matlab/Simulink). Pre-Master Program of Master in Petroleum and Gas Engineering. National University of Engineering. Lima, Peru.
2011- 2015	Engineer. Biomedical and Electromechanical Support Office. National Hospital "Cayetano Heredia". Ministry of Health of Peru. Lima, Peru. From September 2014 to March 2015, I was Chairman of the Biomedical Support Office.
2011 – 2014	Professor Associate. Courses: Control Theory; Heat Transfer and Fluid Mechanics,

	Electromagnetism. Physical Engineering Department. Faculty of Sciences. Professor Courses: Applied Mathematics (using Matlab/Simulink). Pre-Master Program of Master in Petroleum and Gas Engineering. National University of Engineering. Lima, Peru.
2011 – 2013	Professor. Courses: Renewable Energy; Heat Transfer and Thesis Seminary. Mechanical and Electrical Engineering Department. Universidad Nacional Tecnológica del Cono Sur de Lima. Lima, Peru.
2008 – 2011	Researcher. Center of Information and Communications Technology. National University of Engineering. Lima, Peru.
2010	Professor. Courses: Mathematics I, Basic Mathematics I. Civil Engineering Department and Mines Engineering Department. “Alas Peruanas” University. Chota, Peru.
2003 - today	Chairman of Science Association of Chota. <a href="http://www.geocities.ws/achc_chota/">http://www.geocities.ws/achc_chota/</a>
2000 – 2011	Engineer. Maintenance Office. Hospital “José Soto Cadenillas”. Ministry of Health of Peru. Chota City, Peru.

### Positions and Employments

2015	"Peru Army Award, Encouragement of Research, Development and Innovation in Science and Technology AF-2015". Army of Peru. 3rd Place. Category "B": Universities, public and / or private. "Modular Portable Sanitary Unit Response excreta treatment Liquid Contaminants Carrying infectious bacteria in epidemic conditions using two pH changes for hospitals and others." Augusto José Banda Quintana, Jorge Luis Mírez Tarrillo, Raúl Acosta Salazar. <a href="http://www.ejercito.mil.pe/index.php/prensa/informativos/491-cuadro-general-de-ganadores-del-concurso-premio-ej%C3%A9rcito-del-per%C3%BA.-estimulo-a-la-investigaci%C3%B3n.-desarrollo-e-innovaci%C3%B3n-en-ciencia-y-tecnolog%C3%ADa-af-2015">http://www.ejercito.mil.pe/index.php/prensa/informativos/491-cuadro-general-de-ganadores-del-concurso-premio-ej%C3%A9rcito-del-per%C3%BA.-estimulo-a-la-investigaci%C3%B3n.-desarrollo-e-innovaci%C3%B3n-en-ciencia-y-tecnolog%C3%ADa-af-2015</a>
2014	National University of "Chota" <a href="http://www.unach.edu.pe">http://www.unach.edu.pe</a> Resolution No. 040 - 2014 - C.O./UNACH of May 9, 2014 "Distinguish ... and impose the Medal of the National Autonomous University of Chota in recognition and congratulations to your struggling career as a professional."
2011	First Place in the Area of Science - MSc. V National Contest Graduate Thesis Masters and Doctorate. National Assembly of Rectors (Asamblea Nacional de Rectores - ANR). Peru.
2003	Collaborator. National Center for Applied Electromagnetism - CNEA. University of Oriente. Santiago de Cuba, Cuba.

### Scientific Production

- Jorge Mírez. “A Review of Droop Control Implementation in Microgrids”. 2019 International Conference on Mechatronics, Electronics and Automotive Engineering (ICMEAE). DOI: <https://doi.org/10.1109/ICMEAE.2019.00034>
- Jorge Mírez; Segundo Horna; Daniel Carranza. “A mathematical model of SmartValley for estimation of contribution of biomass to the electrical generation”. 2019 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC). DOI: <https://doi.org/10.1109/ROPEC48299.2019.9057045>
- Jorge Mírez, Luis Hernández Callejo, Manfred Horn et al. “Simulation of DC Microgrid and Study of Power and Battery Charge/Discharge Management Optimal”. DYNA 2017, 92(6). 673-679. DOI: <http://dx.doi.org/10.6036/8475>
- Jorge Mírez. “A modeling and simulation of optimized interconnection between DC microgrids with novel strategies of voltage, power and control”. 2017 IEEE Second International Conference on DC Microgrids (ICDCM). DOI: [10.1109/ICDCM.2017.8001098](https://doi.org/10.1109/ICDCM.2017.8001098)
- David Sarzosa, Jorge Mírez. “Diseño y Construcción de un Prototipo de Inversor Multinivel Monofásico en Cascada”. Perfiles. N° 17, Vol. 1 (2017). pp.: 19-24. [Available in <http://ceaa.epoch.edu.ec:8080/revista.perfiles/faces/Revistas/Art3Edicion17.pdf>]
- Jorge-Luis Mírez-Tarrillo. “Technical-economic analysis of a AC/DC Microgrid for Public Health Institutions with low demand electrical. Case study: Peru”. Perfiles. N° 16 Vol. 2(2016). pp.: 50-55. [Available in: <http://ceaa.epoch.edu.ec:8080/revista.perfiles/faces/Revistas/Art7Edicion16.pdf>]
- D. Miraglia, J. Mírez Tarrillo y D. Miraglia. Application of Loop Automation in an overhead distribution network of medium voltage. Revista Inge@UAN. ISSN 2145-0935. Vol. 5. No. 10. pp 16-20. enero-junio de 2015. Universidad Antonio Nariño, Revista Facultades de Ingeniería. [Available in: <http://csifsvr.uan.edu.co/index.php/ingean/article/view/341/pdf>]
- J. Mírez, G. Portilla, T. Cortéz, H. de las Casas. “Proposal of a Bicycle/Stretcher for Mobility of Astronauts on the Mars Surface”. 17th Annual International Mars Society Convention. League City, TX, USA. August 7 – 10, 2014. [Available in: [http://www.marspapers.org/papers/Mirez\\_2014.pdf](http://www.marspapers.org/papers/Mirez_2014.pdf)]

- H. de las Casas, A. Díaz, J. Mírez, T. Fernández. “The Performance of a Rover and Hexapod in Mars Environments”. 17th Annual International Mars Society Convention. League City, TX, USA. August 7 – 10, 2014. [Available in: [http://www.marspapers.org/papers/DeLasCasas\\_2014.pdf](http://www.marspapers.org/papers/DeLasCasas_2014.pdf)]
- J. L. Mírez, H. R. Chamorro, C. A. Ordoñez, R. Moreno. “Energy Management of Distributed Resources in Microgrids”. IEEE CWCAS 2014. Colombia. 2014.
- J. Mírez, Jorge Taramona, Jorge García. “GPS Positioning Data Analysis and Its Relation to Equatorial Ionospheric Anomalies”. 13th International Symposium on Equatorial Aeronomy - ISEA. [Available in: [http://jro-app.igp.gob.pe/isea13/trabajos/abstract\\_361.pdf](http://jro-app.igp.gob.pe/isea13/trabajos/abstract_361.pdf)]. Poster. 2012.
- J. Mírez, J. Tristán. “Dissolved Movement of Ions and pH Regulation in a Substance Aqueous under a Magnetic Field Constant”. Tecnología Química. Special Edition ISSN 00418420. Cuba. 2001

#### Relevant Academic Activities

- Visiting Researcher in Sandia National Laboratories (Electric Power Systems Research Group), Albuquerque, NM, USA. “Development of software of optimization for Microgrids and Smart Grids”. January 7 to April 3, 2016 <http://www.sandia.gov>.
- Member of Technical Program Committee of ISGT Latin America – Innovative Smart Grid Technologies Conference Latin America, October 5-7, 2015, Montevideo, Uruguay. <http://isgta.org/tpc.html>
- Internship Research in CEDER – Center of Development in Renewable Energies. “Microgrids: Modeling, Simulations”. Soria City, Spain. June 2015. <http://www.ceder.es>.
- Commander Crew 140 in Mars Desert Research Station – MDRS of Mars Society, Utah. USA. April 12 - 27, 2014. <http://desert.marssociety.org/home/crew-140> (14 days)
- Member of the Crew 141 in Mars Desert Research Station – MDRS of Mars Society, Utah. USA. April 28 – May 10, 2014. <http://mdrs141.weebly.com/> (14 days)
- 2013 – 2014: “Technical and Financial Feasibility of Wind Power-to-Gas Systems: A Case Study of the Talara Wind Farm, Peru”. Daniella Rough. Faculty of Environmental and Natural Resources – University of Freiburg, Germany (in cooperation with ZEE – Centre for Renewable Energy). Freiburg, Germany. Graduate Thesis Advisor (Master) for Master of Science in Renewable Energy Management.
- January – April 2013. “Mathematics of Bio-Economics”. Institut Henri Poincaré <http://www.ihp.fr> París, France. <http://cermics.enpc.fr/~delara/MABIES/MABIES/>
- June 2012. Oral Presentation. “Modeling and Simulation of Microgrid DC with Solar and Wind Power, Storage, Electric Load Residential in Matlab/Simulink”. 2nd Global Discovery Alternative & Sustainable Energy Systems Workshop <http://globaldiscoveryworkshop.unt.edu>. North Texas University. Denton, Texas, USA.
- 2011. First Workshop Ibero American of Nano satellites. National University of Engineering, Lima, Peru.
- 2010. Summer Course in Physics. Institute of Physics (<http://www.if.usb.br>). University of Sao Paulo (<http://www.usp.br>). Sao Paulo, Brazil.

#### Skills

- Programmer on Matlab/Simulink of MathWorks Inc.
- Admin of Matlab Group in Facebook: (more of 115,914 members - The world's largest group in Facebook about Matlab/Simulink) <https://www.facebook.com/groups/Matlab.Simulink.for.All/>.
- **Creator** and **Admin** of Blogs:
 

Matlab/Simulink in Renewable Energy	<a href="http://jmirez.wordpress.com">http://jmirez.wordpress.com</a>	more of 690,530 views
Matlab/Simulink in Control Theory	<a href="http://jmirezcontrol.wordpress.com">http://jmirezcontrol.wordpress.com</a>	more of 304,853 views
Blog about Engineering in Health Sector	<a href="http://jmirezmedical.wordpress.com">http://jmirezmedical.wordpress.com</a>	more of 191,873 views
Matlab/Simulink in Mathematics	<a href="http://jmirezmath.wordpress.com">http://jmirezmath.wordpress.com</a>	more of 73,960 views
Blog about Personal Motivation	<a href="http://jmirezmotivational.wordpress.com">http://jmirezmotivational.wordpress.com</a>	more of 30,745 views
Matlab in Economics	<a href="http://jmirezeconomics.wordpress.com">http://jmirezeconomics.wordpress.com</a>	more of 19,002 views
Matlab/Simulink in Physics	<a href="http://jmirezphysics.wordpress.com">http://jmirezphysics.wordpress.com</a>	more of 12,611 views
Blog from Magnetic Treatment of Water	<a href="http://jmirezwater.wordpress.com">http://jmirezwater.wordpress.com</a>	more of 1,923 views