Lucía R. Capdevila

Curriculum Vitae

CONTACT INFORMATION

Aerospace Engineering, ENG 272 #E
San José State University
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EDUCATION

2016 Ph.D., Aero. & Astro. Engineering, Purdue University, W. Lafayette, IN
Dissertation Title: "A Transfer Network Linking Earth, Moon, and the Triangular Libration Point Regions in the Earth-Moon System"

2008 M.S., Aero. & Astro. Engineering, Purdue University, W. Lafayette, IN
Thesis Title: "Investigation of Transfer Trajectories to and from the Equilateral Libration Points L_4 and L_5 in the Earth-Moon System."

2004 B.S., Aero. & Astro. Engineering, Purdue University, W. Lafayette, IN

PROFESSIONAL APPOINTMENTS/EMPLOYMENT

San José State University, Aerospace Engineering, Assistant Professor, 2018 – Present

PUBLICATIONS

Refereed Journal Articles

Capdevila, L. R. and Howell, K. C. (2018). A transfer network linking Earth, Moon, and the triangular libration point regions in the Earth-Moon system. Advances in Space Research, 62(7), 1826-1852. DOI: 10.1016/j.asr.2018.06.045

Conference Proceedings

Capdevila, L. (2017) A Comparison of Student Performance and Satisfaction in Traditional vs. Flipped Style Classroom Formats for an Engineering Course in Numerical Methods and Programming. Proceedings of the 4th International Engineering and Technical Education Conference, Hanoi, Vietnam, December 4-6, 2017.

Capdevila, L., Guzzetti, D., & Howell, K. (2014). Various Transfer Options from Earth into Distant Retrograde Orbits in the Vicinity of the Moon. In R. S. Wilson, R. Zanetti, D. L.

Mackison, & Abdelkhalik O. (Eds.) *Spaceflight Mechanics 2014: Advances in the Astronautical Sciences, Volume 152.* Paper presented at 24th AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, 26-30 January (pp 3659-367) San Diego, CA: Univelt.

AWARDS, HONORS, FELLOWSHIPS & GRANTS

2019 First in the World Mini Grant, San José State University, San José, CA

2018 Collaborative Project Award, San José State University, San José, CA

2017 California Space Grant Consortium, San José State University, San José, CA

2015 Graduate Teaching Award, Teaching Academy, Purdue University, W. Lafayette, IN

2013 Magoon Teaching Award, College of Engineering, Purdue University, W. Lafayette, IN

2011 East Asia and Pacific Summer Institutes, National Science Foundation, Kyoto University, Kyoto, Japan

2010 Summer Research Grant, School of Aeronautics & Astronautics, Purdue University, W. Lafayette, IN

CONFERENCE PARTICIPATION

Presented Papers

A Comparison of Student Performance and Satisfaction in Traditional vs. Flipped Style Classroom Formats for an Engineering Course in Numerical Methods and Programming, 4th International Engineering and Technical Education Conference, 2017

Various Transfer Options from Earth into Distant Retrograde Orbits in the Vicinity of the Moon. 24th AAS/AIAA Space Flight Mechanics Meeting, 2014

TEACHING EXPERIENCE

San José State University

Computer Programming for Aerospace Engineers (Fall 2018, Spring 2018)

Aerospace Structures I (Fall 2017)

Foothill College

Dynamics (Spring 2017)

Programming and Problem Solving in MATLAB (Spring 2017, Winter 2017)

Purdue University

Transforming Ideas to Innovation I (Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2014)

Transforming Ideas to Innovation II (Spring 2009, Spring 2010, Spring 2011, Spring 2012, Summer 2012, Spring 2013, Spring 2014, Spring 2015)

Algebra (Fall 2007)

Controls Systems Laboratory (Spring 2005)

RESEARCH EXPERIENCE

2015 NASA JPL Summer Intern: Built and simulated ephemeris Sun-Earth-Moon model using ECI frame, and calculated transfer trajectories between lunar orbits

2011 Kyoto University: Calculated transfer trajectories between Earth orbits in the Circular Restricted Three Body Problem

SERVICE TO PROFESSION

2017 Reviewer for Celestial Mechanics and Dynamical Astronomy

2018 Reviewer for The Journal of the Astronautical Sciences

2018 Reviewer for Advances in Space Research

EXTRACURRICULAR UNIVERSITY SERVICE

2017 Academic advising

2017 – 2018 Technical advisor for San José State University EPICS (Engineering Projects in Community Service) team participating in NASA JSC's Micro-g NExT Challenge

2017 Workshop for graduate students on MATLAB basics at San José State University

2017 Mentor for NSF S-STEM scholarship recipient at Foothill College

2014 – 2016 Peer Ombudsperson for Purdue University Graduate School

COMMUNITY INVOLVEMENT/OUTREACH

2017-2018 Math Tutor for Project READ at Redwood City Public Library, Redwood City, CA

2010 Summer Instructor for Lyn Treece Boys & Girls Club in Lafayette, IN

RELATED PROFESSIONAL SKILLS

Dynamical Systems Theory

Spacecraft trajectory analysis and design in multi-body gravitational field

Differential correction algorithms (multi-dimensional Newton-Raphson scheme)

Predictor/corrector (continuation) algorithms

MATLAB (ODE, Optimization and Simulink toolboxes; MEX files; GUIs),
MATLAB SPICE Toolkit (Mice)

Systems Tool Kit (STK)/Astrogator

Fortran, C, HTML, LaTeX

MS Windows, Unix

Canvas, Blackboard Learn

AutoCAD, Inkscape

LANGUAGES

Spanish: Native speaker, reader, and writer

English: Fluent speaker, reader, and writer

French: Beginner speaker, reader, and writer

Japanese: Beginner speaker, reader, and writer

PROFESSIONAL MEMBERSHIPS/AFFILIATIONS

American Institute of Aeronautics and Astronautics (AIAA)

American Society for Engineering Education (ASEE)