

Diogo Merguizo Sanchez

Curriculum Vitae

CONTACT INFORMATION

The University of Oklahoma

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RESEARCH INTERESTS

- Orbital mechanics and astrodynamics.
- Celestial mechanics.
- Planetary mission design.
- Spacecraft attitude and control.
- Space vehicle guidance.
- Dynamical systems theory.
- Numerical methods.

EDUCATION

Ph.D. in Space Technology and Engineering, Brazilian National Institute for Space Research - INPE, 2015

“Estudo de captura gravitacional e custos de manutenção orbital em dinâmicas não keplerianas - On the gravitational capture and maintenance of spacecraft in non-Keplerian dynamics”

Advisors: Antonio Fernando Bertachini de Almeida Prado

Tadashi Yokoyama

M.Sc. in Applied Physics, São Paulo State University, Unesp, Brazil, 2009

“Dinâmica Ressonante de Alguns Satélites Artificiais Terrestres no Sistema Terra-Lua-Sol - Resonant dynamics of some artificial satellites in the Earth-Moon-Sun system”

Advisor: Tadashi Yokoyama

B.Sc. in Physics, São Paulo State University, Unesp, Brazil, 2007

Licentiate in Physics, São Paulo State University, Unesp, Brazil, 2006

SKILLS

- Experience in Aerospace Engineering and Astronomy, with an emphasis on Orbital Mechanics, Astrodynamics, and Celestial Mechanics.

- Experience with numerical simulation, perturbation theory, satellite stability and disposal orbits, small-body exploration, trajectory analysis, leverage of perturbations (as solar radiation pressure) to change the orbit of satellites, de-orbiting, and gravitational capture.
- Development of orbit propagator software. Average experience with regular orbital tools such as STK.
- Extensive knowledge of Fortran and Python programming languages. Average experience using other programming languages, such as bash script, C++, MATLAB, and graphical tools, such as Gnuplot.
- Experience in algebraic software, such as Maple.
- Familiarity and experience in the Linux, macOS, and Windows operating systems.

PROFESSIONAL EXPERIENCE

- 2022- Assistant Professor, The University of Oklahoma
Gallogly College of Engineering
School of Aerospace and Mechanical Engineering
- 2021-2022 Math teacher, Colégio Cói - Araras, SP
- 2020-2022 Collaborating Researcher, Brazilian National Institute for Space Research - INPE
- 2019-2020 Postdoctoral Researcher, Brazilian National Institute for Space Research - INPE
“Study of the orbital stability of spacecraft in non-Keplerian systems”
Financial support: National Council for Scientific and Technological Development
(CNPq) **grant #150678/2019-3**
Supervisor: Antonio Fernando Bertachini de Almeida Prado
- 2015-2019 Postdoctoral Researcher, Brazilian National Institute for Space Research - INPE
“Study of the dynamics of spacecraft in triple systems”
Financial support: São Paulo Research Foundation (FAPESP) **grant #2014/22295-5**
Supervisor: Antonio Fernando Bertachini de Almeida Prado
- 2015-2016 Exchange visitor, Purdue University, Indiana, USA
Visiting Scholar in the Dept. of Aeronautics and Astronautics Engineering
Financial support: São Paulo Research Foundation (FAPESP) **grant #2015/13341-6**
Supervisor: Kathleen C. Howell
- 2012-2013 Academic tutor (GTA), Federal University of São Paulo - UNIFESP, Brazil
Academic tutoring on physics for undergraduate students.
- 2008-2011 High School teacher, São Paulo State Government, Brazil
Physics teacher in the school “Francisco Graziano”, Araras-SP, Brazil

JOURNAL PUBLICATIONS (Key: **D. M. Sanchez**, *D. M. Sanchez's students*)

- 33 Caritá, G. A.; Aljbaae, S.; Prado, A. F. B. A.; Signor, A. C.; Morais, M. H. M.; **Sanchez, D. M.**, “Analysis of the natural orbits around Io,” *Celestial Mechanics and Dynamical Astronomy*, Volume 135, article 46, **2023**, DOI: 10.1007/s10569-023-10160-5
- 32 Santos, L.B.T.; Souza-Silva, P.A.; Terra, M.O.; Aljbaae, S.; **Sanchez, D.M.**; Prado, A.F.B.A.; Oliveira, G.M.; Monteiro, F.; Almeida Jr., A.K.; Lima, N.B.; Lima, N.B.D., “Analysis of the dynamics of a spacecraft in the vicinity of an asteroid binary system with equal masses,” *Planetary and Space Science*, Volume 233, article 105701, **2023**, DOI: 10.1016/j.pss.2023.105701
- 31 Santos, L. B. T.; Almeida Jr, A. K; Sousa-Silva, P. A.; Terra, M. O.; **Sanchez, D. M.**; Aljbaae, S.; Prado, A. F. B. A.; Monteiro, F., “Numerical investigations of the orbital dynamics around synchronous binary system asteroids,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 59, Issue 1, pp. 83-97, **2023**, DOI: 10.22201/ia.01851101p.2023.59.01.05
- 30 Santos, L. B. T.; Sousa-Silva, P. A.; Terra, M. O.; Mani, K. V.; Almeida Jr, A. K.; **Sanchez, D. M.**; Prado, A. F. B. A., “Optimal transfers from Moon to L2 halo orbit of the Earth-Moon system,” *Advances in Space Research*, Volume 70, pp. 3362-3372, **2022**, DOI: 10.1016/j.asr.2022.08.035
- 29 Mateus, D. A. C.; Prado, A. F. B.; **Sanchez, D. M.**; Moraes, R. V., “Dynamics of a Particle in 3:1 Tesseral Resonance with the Dwarf Planet Haumea,” *Symmetry*, Volume 14, Article 1378, 23 pages, **2022**, DOI: 10.3390/sym14071378
- 28 Marchi, L. O.; **Sanchez, D. M.**; Venditti, F. C. F.; Prado, A. F. B.; Misra, A., “On the effects of the solar radiation pressure on the deviation of asteroids,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 57, Issue 2, pp. 279-295, **2021**, DOI: 10.22201/ia.01851101p.2021.57.02.03
- 27 Aljbaae, S.; Souchay, J.; Carruba, V.; **Sanchez, D.M.**; Prado, A.F.B.A., “Influence of Apophis spin axis variation on a spacecraft during the 2029 close approach with Earth,” *Romanian Astronomical Journal*, Volume 31, Issue 3, pp. 317-338, **2021**.
- 26 Aljbaae, S.; **Sanchez, D. M.**; Prado, A. F. B. A.; Souchay, J.; Terra, M. O.; Negri, R. B.; Marchi, L. O., “First approximation for spacecraft motion relative to (99942) Apophis,” *Romanian Astronomical Journal*, Volume 31, Issue 3, pp. 241-264, **2021**.
- 25 Santos, L. B. T.; Marchi, L. O.; Aljbaae, S.; Sousa-Silva, P.; **Sanchez, D. M.**; Prado, A. F. B. A., “A particle-linkage model for elongated asteroids with three-dimensional mass distribution,” *Monthly Notices of the Royal Astronomical Society*, Volume 502, Issue 3, pp. 4277-4289, **2021**, DOI: 10.1093/mnras/stab198
- 24 Santos, L. B. T.; Marchi, L. O.; Sousa-Silva, P.; **Sanchez, D. M.**; Aljbaae, S.; Prado, A. F. B. A., “Dynamics around an asteroid modeled as a mass tripole,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 56, Issue 2, pp. 269-286, **2020**, DOI: 10.22201/ia.01851101p.2020.56.02.09

23. **Sanchez, D. M.**; Deienno, R.; Prado, A. F. B. A.; Howell, K. C., “Perturbation Maps and the ring of Haumea,” *Monthly Notices of the Royal Astronomical Society*, Volume 496, Issue 2, pp. 2085-2097, **2020**, DOI: 10.1093/mnras/staa1696
22. Aljbaae, S.; Prado, A. F. B. A.; **Sanchez, D. M.**; Hussmann, H., “Analysis of the orbital stability close to the binary asteroid (90) Antiope,” *Monthly Notices of the Royal Astronomical Society*, Volume 496, Issue 2, pp. 1645-1654, **2020**, DOI: 10.1093/mnras/staa1634
21. *Cavalca, M. P. O.*; Gomes, V. M.; **Sanchez, D. M.**, “Mid-range natural orbits around the triple asteroid 2001 SN₂₆₃” *The European Physical Journal Special Topics*, Volume 229, Issue 8, pp 1557-1572, **2020**, DOI: 10.1140/epjst/e2020-900093-0
20. Venditti, C. F. F.; *Marchi, L. O.*; Misra, A. K.; **Sanchez, D. M.**; Prado, A. F. B. A., “Dynamics of tethered asteroid systems to support planetary defense” *The European Physical Journal Special Topics*, Volume 229, Issue 8, pp 1463-1477, **2020**, DOI: 10.1140/epjst/e2020-900183-y
19. *Cavalca, M. P. O.*; Prado, A. F. B. A.; Gomes, V. M.; **Sanchez, D. M.**, “‘Quasi Satellite Orbits’ to observe a possible small moon of Pallas,” *New Astronomy*, Volume 75, Article 101317, **2020**, DOI: 10.1016/j.newast.2019.101317
18. **Sanchez, D. M.**; Prado, A. F. B. A., “Searching for Less-Disturbed Orbital Regions Around the Near-Earth Asteroid 2001 SN₂₆₃,” *Journal of Spacecraft and Rockets*, Volume 56, Issue 6, pp. 1775-1785, **2019**, DOI: 10.2514/1.A34402
17. *Cavalca, M. P. O.*; Prado, A. F. B. A.; Gomes, V. M.; **Sanchez, D. M.**, “Searching for mid-range planar orbits to observe Deimos,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 55, Issue 2, pp. 305-319, **2019**, DOI: 10.22201/ia.01851101p.2019.55.02.16
16. Aljbaae, S.; Chanut, T. G. G.; Prado, A. F. B. A.; Carruba, V.; Hussmann, H.; Souchay, J.; **Sanchez, D. M.**, “Orbital stability near the (87) Sylvia system,” *Monthly Notices of the Royal Astronomical Society*, Volume 486, Issue 2, pp. 2557-2569, **2019**, DOI: 10.1093/mnras/stz998
15. **Sanchez, D. M.**; Sukhanov, A. A.; Prado, A. F. B. A., “Optimal trajectories to Kuiper belt objects,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 55, Issue 1, pp. 39-54, **2019**
14. *Cavalca, M. P. O.*; Prado, A. F. B. A.; Formiga, J. K. S.; Gomes, V. M.; **Sanchez, D. M.**, “Studying mid-range planar orbits around Phobos,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 54, Issue 2, pp. 429-442, **2018**
13. *Almeida Jr, A. K.*; Prado, A. F. B. A.; Yokoyama, T.; **Sanchez, D. M.**, “Spacecraft motion around artificial equilibrium points,” *Nonlinear Dynamics*, Volume 91, Issue 3, pp. 1473-1489, **2018**, DOI: 10.1007/s11071-017-3959-2
12. *Santos, L. B. T.*; Prado, A. F. B. A.; **Sanchez, D. M.**, “Lifetime of a spacecraft around a synchronous system of asteroids using a dipole model,” *Astrophysics and Space Science*, Volume 362, Article 202, 12 pp., **2017**, DOI: 10.1007/s10509-017-3177-x

11. *Oliveira, G. M. C.*; Prado, A. F. B. A.; **Sanchez, D. M.**; Gomes, V. M., “Orbital transfers in an asteroid system considering the solar radiation pressure,” *Astrophysics and Space Science*, Volume 362, Article 187, 13 pp., **2017**, DOI: 10.1007/s10509-017-3162-4
10. *Santos, L. B. T.*; Prado, A. F. B. A.; **Sanchez, D. M.**, “Equilibrium points in the restricted synchronous three-body problem using a mass dipole model,” *Astrophysics and Space Science*, Volume 362, Article 61, 11 pp., **2017**, DOI: 10.1007/s10509-017-3030-2
9. *Almeida Jr, A. K.*; Prado, A. F. B. A.; **Sanchez, D. M.**; Yokoyama, T., “Searching for artificial equilibrium points to place satellites ‘above and below’ L3 in the Sun-Earth system,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 53, Issue 2, pp. 349-359, **2017**
8. *Silva Neto, J. B.*; **Sanchez, D. M.**; Prado, A. F. B. A.; Smirnov, G. V., “On the use of controlled radiation pressure to send a satellite to a graveyard orbit,” *Revista Mexicana de Astronomía y Astrofísica*, Volume 53, Issue 2, pp. 321-332, **2017**
7. Deienno, R.; **Sanchez, D. M.**; Prado, A. F. B. A.; Smirnov, G., “Satellite de-orbiting via controlled solar radiation pressure,” *Celestial Mechanics and Dynamical Astronomy*, Volume 126, Issue 4, pp. 433-459, **2016**, DOI: 10.1007/s10569-016-9699-7
6. Gomes, V. M.; *Oliveira, G. M. C.*; Prado, A. F. B. A.; **Sanchez, D. M.**, “Close approach of a cloud of particles around an oblate planet,” *Computational and Applied Mathematics*, Volume 34, Issue 3, pp. 663-673, **2016**, DOI: 10.1007/s40314-015-0264-x
5. **Sanchez, D. M.**; Yokoyama, T.; Prado, A. F. B. A., “Study of Some Strategies for Disposal of the GNSS Satellites,” *Mathematical Problems in Engineering*, Volume 2015, Article ID: 382340, **2015**, DOI: 10.1155/2015/382340
4. **Sanchez, D. M.**; Prado, A. F. B.; Yokoyama, T., “On the Effects of Each Term of the Geopotential Perturbation Along the Time I: Quasi-circular Orbits,” *Advances in Space Research*, Volume 54, Issue 6, pp. 1008-1018, **2014**, DOI: 10.1016/j.asr.2014.06.003
3. **Sanchez, D. M.**; Yokoyama, T.; Brasil, P. I. O.; Cordeiro, R. R., “Some initial conditions for Disposed Satellites of the Systems GPS and Galileo Constellations,” *Mathematical Problems in Engineering*, Volume 2009, Article ID: 510759, **2009**, DOI: 10.1155/2009/510759
2. Stuchi, T.; Yokoyama, T.; Correa, A. A.; Solorzano, C. R. H.; **Sanchez, D. M.**; Winter, S. M. G.; Winter, O. C., “Dynamics of a Spacecraft and normalization around Lagrangian points in the Neptune-Triton System,” *Advances in Space Research*, Volume 42, Issue 10, pp. 1715-1722, **2008**, DOI: 10.1016/j.asr.2007.04.007
1. Yokoyama, T.; Vieira-Neto, E.; Winter, O. C.; **Sanchez, D. M.**; Brasil, P. I. O., “On the Evection Resonance and Its Connection to the Stability of Outer Satellites,” *Mathematical Problems in Engineering*, Volume 2008, Article ID: 251978, **2008**, DOI: 10.1155/2008/251978

PEER-REVIEWED CONFERENCE PAPERS (Key: **D. M. Sanchez**, *D. M. Sanchez's students*)

6. *Cavalca, M. P. O.*; Prado, A. F. B.; Gomes, V. M.; **Sanchez, D. M.**, "Orbital maneuvers to form a constellation of small satellites from a single large spacecraft," XIX Colóquio Brasileiro de Dinâmica Orbital – CBDO, **2018**, In: 2019, Journal of Physics: Conference Series, Volume 1365, Article: 012017, DOI: 10.1088/1742-6596/1365/1/012017
5. *Santos, L. B. T.*; Prado, A. F. B. A.; **Sanchez, D. M.**, "Equilibrium points in the asteroid 2001SN₂₆₃," XVIII Colóquio Brasileiro de Dinâmica Orbital – CBDO, **2016**, In: 2017, Journal of Physics: Conference Series, Volume 911, Article: 012023, DOI: 10.1088/1742-6596/911/1/012023
4. *Silva Neto, J. B.*; Prado, A. F. B. A.; **Sanchez, D. M.**; Formiga, J. K. S., "On the use of a variable coefficient of reflectivity associated with an augmented area-to-mass ratio to de-orbit CubeSats," XVIII Colóquio Brasileiro de Dinâmica Orbital – CBDO, **2016**, In: 2017, Journal of Physics: Conference Series, Volume 911, Article: 012009, DOI: 10.1088/1742-6596/911/1/012009
3. *Oliveira, G. M. C.*; Prado, A. F. B. A.; **Sanchez, D. M.**, "Close approach maneuvers around an oblate planet," XVII Colóquio Brasileiro de Dinâmica Orbital – CBDO, **2014**, In: 2015, Journal of Physics: Conference Series, Volume 641, Article: 012008, DOI: 10.1088/1742-6596/641/1/012008
2. **Sanchez, D. M.**; Yokoyama, T.; Prado, A. F. B. A., "On The Use Of Resonance To Discard Satellites Of GNSS," 22nd International Congress of Mechanical Engineering, **2013**, Ribeirão Preto - SP, Brazil
1. **Sanchez, D. M.**; Yokoyama, T.; Brasil, P. I. O.; Cordeiro, R. R., "On the Choice of the Initial Conditions for Disposed Satellites of GPS and Galileo Constellations," Brazilian Symposium on Aerospace Engineering and Applications / 3rd CTA-DLR Workshop on Data Analysis and Flight Control, **2009**, São José dos Campos - SP, Brazil

CONFERENCE PAPERS (Key: **D. M. Sanchez**, *D. M. Sanchez's students*)

23. **Sanchez, D.M.**, "On the exploration of the asteroid 2011 UW158," AAS/AIAA Astrodynamics Specialist Conference, **August 2024**, Broomfield, CO, USA, AAS 24-235
22. *Rozek, V.*; **Sanchez, D.M.**, "Preliminary Assessment of Multi-Impactor Strategy for Planetary Defense," AAS/AIAA Astrodynamics Specialist Conference, **August 2024**, Broomfield, CO, USA, AAS 24-347
21. *Gast, R.*; **Sanchez, D.M.**, "Orbital stability analysis and control of a three-satellite constellation considering artificial and natural equilibrium points," AAS/AIAA Astrodynamics Specialist Conference, **August 2024**, Broomfield, CO, USA, AAS 24-268

20. Blosser, E.; **Sanchez, D.M.**, “Preliminary Mission Determination for Asteroid (29075) 1950DA,” AAS/AIAA Astrodynamics Specialist Conference, **August 2024**, Broomfield, CO, USA, AAS 24-280
19. Lasky-Headrick, S.; **Sanchez, D.M.**, “The Dynamics of Particles in Very Close Binary Star Systems,” AAS/AIAA Astrodynamics Specialist Conference, **August 2024**, Broomfield, CO, USA, AAS 24-260
18. Lasky-Headrick, S.; Nimmo, C.; Palmer, V.; Thomas, R. A.; **Sanchez, D. M.**, “Mercurial array of probing seismographs,” AIAA SciTech Forum, **January 2024**, Orlando, FL, USA, AIAA24-0421, DOI: 10.2514/6.2024-1056
17. Lasky-Headrick, S.; **Sanchez, D. M.**, “On the existence and stability of rings around small bodies,” AIAA SciTech Forum, **January 2024**, Orlando, FL, USA, AIAA24-0421, DOI: 10.2514/6.2024-0421
16. **Sanchez, D. M.**; Prado, A. F. B. A., “Stability of highly inclined orbits around the asteroid (153591) 2001 SN₂₆₃,” AAS/AIAA Astrodynamics Specialist Conference, **August 2019**, Portland, ME, USA, AAS 19-798
15. **Sanchez, D. M.**; Prado, A. F. B. A., “Perturbation maps for a spacecraft around the near-Earth Asteroid (153591) 2001 SN₂₆₃,” AAS/AIAA Astrodynamics Specialist Conference, **August 2018**, Snowbird, UT, USA, AAS 18-320
14. Santos, L. B. T.; Sousa-Silva, P. A.; **Sanchez, D. M.**; Prado, A. F. B. A., “Searching for orbits around equilibrium points in a binary asteroid system modeled as a mass dipole,” AAS/AIAA Astrodynamics Specialist Conference, **August 2018**, Snowbird, UT, USA, AAS 18-396
13. Prado, A. F. B. A.; **Sanchez, D. M.**; Brejão, L. F.; Santos, L. B. T., “Studying the motion of a spacecraft orbiting an asteroid modeled as an asymmetric mass dipole,” AAS/AIAA Astrodynamics Specialist Conference, **August 2018**, Snowbird, UT, USA, AAS 18-380
12. Marchi, L. O.; Venditti, F. C. F.; **Sanchez, D. M.**; Prado, A. F. B. A., “Dynamical effects of solar radiation pressure on the deflection of Near-Earth asteroids,” AAS/AIAA Astrodynamics Specialist Conference, **August 2018**, Snowbird, UT, USA, AAS 18-350
11. Silva Neto, J. B.; **Sanchez, D. M.**; Prado, A. F. B. A., “Co-Orbital Orbits Around the Asteroid 65803 Didymos (1996 GT),” 28th AIAA/AAS Space Flight Mechanics Meeting, **January 2018**, Kissimmee, FL, USA, AIAA 2018-0719, DOI: 10.2514/6.2018-0719
10. **Sanchez, D. M.**; Prado, A. F. B., “On the Use of Mean Motion Resonances to Explore the Haumea System,” AAS/AIAA Astrodynamics Specialist Conference, **August 2017**, Stevenson, WA, USA, AAS 17-762
9. Silva Neto, J. B.; **Sanchez, D. M.**; Prado, A. F. B. A., “On the Use of Solar Radiation Pressure to Eject a Spacecraft Orbiting The Asteroid 65803 Didymos (1996 GT),” AAS/AIAA Astrodynamics Specialist Conference, **August 2017**, Stevenson, WA, USA, AAS 17-764

8. **Sanchez, D. M.**; Howell, K. C.; Prado, A. F. B. A., “Search for stable regions in the irregular Haumea-Namaka binary system,” 27th AAS/AIAA Space Flight Mechanics Meeting, **February 2017**, San Antonio, TX, USA, AAS 17-305
7. **Sanchez, D. M.**; Howell, K. C.; Prado, A. F. B. A., “On the dynamics of a spacecraft in the irregular Haumea-Hi'iaka binary,” 26th AAS/AIAA Space Flight Mechanics Meeting, **February 2016**, Napa, CA, USA, AAS 16-320
6. *Oliveira, G. M. C.*; Prado, A. F. B. A.; **Sanchez, D. M.**; Gomes, V. M., “Traveling Between the Earth-Moon Lagrangian Points and the Earth,” 14th International Conference on Space Operations, **May 2016**, Daejeon, Korea, AIAA 2016-2558, DOI: 10.2514/6.2016-2558
5. **Sanchez, D. M.**; Prado, A. F. B. A.; Yokoyama, T., “Searching for periodic and quasi-periodic orbits of spacecrafts on the Haumea system,” AAS/AIAA Astrodynamics Specialist Conference, **August 2015**, Vail, CO, USA, AAS 15-770
4. **Sanchez, D. M.**; Prado, A. F. B. A.; Yokoyama, T., “Gravitational Capture and Maintenance of a Spacecraft Around Pluto,” AIAA/AAS Astrodynamics Specialist Conference, **August 2014**, San Diego, CA, USA, AIAA 2014-4280, DOI: 10.2514/6.2014-4280
3. **Sanchez, D. M.**; Prado, A. F. B. A.; Sukhanov, A. A.; Yokoyama, T., “Optimal Transfer Trajectories to the Haumea System,” 13th International Conference on Space Operations, **May 2014**, Pasadena, CA, USA, AIAA 2014-1639, DOI: 10.2514/6.2014-1639
2. **Sanchez, D. M.**; Brasil, P. I. O.; Yokoyama, T., “Sobre a Escolha de Condições Iniciais para os Satélites Descartáveis no Sistema GPS e GALILEO,” 7th Brazilian Conference on Dynamics, Control and Their Applications, **2008**, Presidente Prudente - SP, Brazil
1. Yokoyama, T.; **Sanchez, D. M.**; Brasil, P. I. O.; Vieira Neto, E.; Winter, O. C., “On the Derivation of the Semi Major Axis for the Stability of Prograde and Retrograde Satellites,” 6th Brazilian Conference on Dynamics, Control and Their Application, **2007**, São José do Rio Preto - SP, Brazil

RECENT INVITED TALKS

Sanchez, D. M., “On the applications of Perturbation Maps,” seminar presented at the Southwest Research Institute (SwRI Boulder) Colloquium, **June 2019**, Boulder, CO.

HONORS & AWARDS

2016 Wagner Sessin Prize for scientific & technological contributions to Orbital Mechanics, during the XVIII Brazilian Colloquium in Orbital Mechanics (CBDO), Águas de Lindoia/SP - Brazil

ADVISING

Current Ph.D. Students:

1. Zahra Kianafrouz: January 2025-Present

Current M.S. Thesis Students:

1. Matthew Dobbs: August 2023-Present
2. Tara Eldridge: August 2023-Present
3. Evan Blosser: January 2024-Present
4. Blake Johnson: May 2024-Present
5. Caden Mathews: May 2024-Present
6. Victoria Rozek: May 2024-Present
7. Ryan Gast: May 2024-Present

TEACHING

AME 4493/5493: Space Sciences and Astrodynamics (Fall – 2022-Present)

AME 5493/5593: Space Systems and Mission Design (Spring – 2023-Present)

SERVICE

Journal Reviews

Celestial Mechanics and Dynamical Astronomy (5)

Astronomy and Astrophysics (1)

Advances in Space Research (6)

Aerospace (1)

Mathematical Problems in Engineering (1)

Journal of Physics: Conference Series (2)

Results in Physics (1)

Journal of Aerospace Technology and Management (1)

Archive in Applied Mechanics (1)

International Journal of Applied and Computational Mathematics (1)

Professional Affiliations

American Astronautical Society (AAS), American Institute of Aeronautics and Astronautics (AIAA)

ADVISING (National Institute for Space Research – INPE - Brazil)

Graduated Ph.D. Students:

1. Allan Kardec de Almeida Junior, graduated: September 2018
2. Geraldo Magela Couto Oliveira, graduated: June 2018
3. Rubens Antonio Condeles Júnior, graduated: April 2018
4. Marina Pires de Oliveira Cavalc, graduated: March 2021
5. José Batista da Silva Neto, graduated: August 2021
6. Leonardo Barbosa Torres dos Santos, graduated: August 2021
7. Luis Otávio Marchi, graduated: April 2022
8. Dairo Antonio Cuellar Mateus, graduated: August 2022

Graduated M.S. Thesis Students:

1. Leandro Forne Brejão, graduated: December 2018

2. Leonardo Barbosa Torres dos Santos, graduated: February 2017
3. José Batista da Silva Neto, graduated: March 2016

M.S. Thesis Committee Membership:

1. Mateus de Castro da Silva (Advisors: Willer Gomes dos Santos and Liana Dias Gonçalves, graduated: December 2022)
2. Maria Livia Galhego Thibes Xavier da Costa (Advisors: Antonio F. B. A. Prado, Rodolpho Vilhena de Moraes, and Jean Paulo dos Santos Carvalho, graduated: July 2020)
3. Rodolfo Batista Negri (Advisors: Antonio F. B. A. Prado and Alexander A. Sukhanov, graduated: February 2018)
4. Marina Pires de Oliveira Cavalca (Advisors: Antonio F. B. A. Prado, Vivian M. Gomes, and Jorge K. S. Formiga, graduated: February 2017)