

Gabriel Borderes Motta

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Leganés, Madrid, Spain

EDUCATION **UNESP - Sao Paulo State University**

Ph. D., Physics **2014-2018**

Thesis Topic: *Gravitational potential using mascons and a dynamic around irregular bodies*

Supervisor: Otho Cabo Winter

Financial Support: CAPES

M. Sc., Physics **2012-2014**

Thesis Topic: *Analytical prediction of the rotational motion of stabilized by rotation satellites*

Supervisor: Maria Cecília Zanardi

Financial Support: CAPES

B.S., Physics. **2007-2011**

Supervisor: Maria Cecília Zanardi

Financial Support: CNPq

COMPLEMENTARY EDUCATION **COSPAR Capacity Building Workshop on Planetary Missions Data Analysis** **2015**

Topic: *Analysis of the Venus's Southern Pole Vortex*

Advisor: Alejandro Cardesin Moinelo

COMPLEMENTARY INFORMATION **Membership** - Grupo de Dinâmica Orbital e Planetologia (GDOP) (Brazil) **2009 - 2019**
Membership - Ingeniería Aeroespacial **2019 - current**

LANGUAGE SKILLS*

	Listening	Reading	Speaking	Writing
Portuguese	Mother Tongue			
English	regular	regular	regular	regular

TECHNICAL SKILLS Programming: C, FORTRAN and UNIX shell script

ACADEMIC
EXPERIENCE

FARO - Roseira college

Teaching

Fundamentals of Electricity for Engineering **2014**
Engineering undergraduate students

Linear Algebra and Vector Calculus **2014-2015**
Engineering undergraduate students

Modeling of Chemical Industrial Processes **2015**
Engineering undergraduate students

UNESP - Sao Paulo State University

Graduate Assistant Teaching

Computer programming **2017**
Mathematics undergraduate students

Linear Algebra and Vector Calculus **2017**
Engineering undergraduate students

PUBLICATIONS

Moura, T. S., Winter, O. C., Amarante, A., Sfair, R., **Borderes-Motta, G.**, Valvano, G.
(16)Psyche:dynamical characteristics of the surface and the environment around it.
Monthly Notices of the Royal Astronomical Society, submitted, (2019).

Winter, O. C., **Borderes-Motta, G.**, Ribeiro, T.
On the location of the ring around the dwarf planet Haumea.
Monthly Notices of the Royal Astronomical Society, v. 484, p. 3765-3771. (2019).

Morgado, B., Vieira-Martins, R., Assafin, M., Machado, D. I., Camargo, J. I. B., Sfair, R., Malacarne,
M., Braga-Ribas, F., Robert, V., Bassalo, T., Benedetti-Rossi G., Boldrin, L. A., **Borderes-Motta,**
G., Camargo, B. C. B., Crispim, A., Dias-Oliveira, A., Gomes-Júnior A. R., Lainey, V., Miranda,
J. O., Moura, T. S., Ribeiro, F. K., de Santana, T., Santos-Filho, S., Trabuco, L. L., Winter, O. C.,
Yamashita, T. A. R.
APPROX-Mutual approximations between the Galilean moons. The 2016-2018 observational cam-
paign.
Monthly Notices of the Royal Astronomical Society, v. 482, p. 5190-5200, (2019).

Borderes-Motta, G. & Winter, O. C.
Poincaré surfaces of section around a 3D irregular body: the case of asteroid 4179 Toutatis.
Monthly Notices of the Royal Astronomical Society, v.474, p.2452 - 2466. (2018)

Zanardi, M. C., Celestino, C. C., **Borderes Motta, G.**, França, E. M. & Garcia, V.
Analysis of analytical attitude propagators for spin-stabilized satellites.
Computational and Applied Mathematics, p.1-14. (2018)

Zanardi, M. C., Orlando, V., **Motta, G. B.**, Pelosi, T. & Silva, W. R.
Numerical and analytical approach for the spin-stabilized satellite attitude propagation.
Computational and Applied Mathematics, v. 35, p.1807-0302. (2016)

Motta, G. B. & Zanardi, M. C.

Influence of the external torques in the angle between the spin axis and the Sun direction for spin stabilized satellite.

Journal of Physics. Conference Series, v.641, p. 012022-012022. (2015)

Motta, G. B., Carvalho, M. V. & Zanardi, M. C.

Analytical Prediction of the Spin Stabilized Satellite's Attitude Using The Solar Radiation Torque.

Journal of Physics. Conference Series, v.465, p.012009 , (2013).

AWARDS AND
RECOGNITIONS

- 1st place in the Student Competition (member of the CU Boulder/UNESP Winner Team) - 2017, Astrodynamics Specialist Conference, American Astronautical Society / American Institute of Astronautics and Aeronautics (AAS/AIAA).
- Academic Merit - 2nd place - B.S., Physics. - 2011, FEG - UNESP.
- Academic Excellence - B.S., Physics. - 2011, FEG - UNESP.

SELECTED
CONFERENCES

1. 2017 - Uruguay - Asteroids, Comets, Meteors
Oral presentation: A study of trajectories around the asteroid 4179 toutatis via Poincaré surface of section
2. 2016 - Brazil - 6th International Conference on Nonlinear Science and Complexity
Poster presentation: Mascons to find equilibrium points around small bodies of irregular shape
3. 2016 - Brazil - VIII Taller de Ciencias Planetarias
Oral presentation: Estudo dinâmico da região de maior temperatura dentro do vórtice no sul de Vênus
4. 2015 - Brazil - 2nd COSPAR Symposium: Water and Life in the Universe
Poster presentation: Mascons as a way to compute orbits for landings on an irregular body
Member of local organization
5. 2014 - Brazil - Small Bodies Dynamics
Poster presentation: Computation of Gravitational Potential os Asteroids via Mascons
Member of local organization
6. 2013 - Argentina - XXI Jornada de Jóvenes investigadores del Grupo Montevideo
Oral presentation: Soluções para equações do movimento de satélites estabilizados por rotação com e sem a presença de torques atuando no eixo rotacional