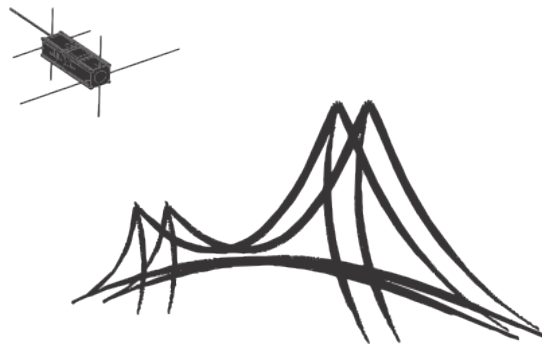


Workshop Program and Abstracts



II IAA LATIN AMERICAN CUBESAT WORKSHOP

28 February to 2 March 2016

Oceania Convention Centre

Florianópolis, Brazil

Organization



Supporting Agencies



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WORKSHOP PROGRAM AND ABSTRACTS EDITION

Chantal Cappelletti
Eduardo Augusto Bezerra
Kleber Vieira de Paiva

Welcome message

Following up its successful 2014 edition held in Brasilia, the II IAA-LACW will keep the focus on topics related to CubeSat technology, providing a forum for scientists and engineers to discuss their achievements and cutting edge findings. Considering the increasing interest in CubeSat activities, and the recent successful Cubesat missions in Latin America, IAA, Federal University of Santa Catarina (UFSC) and University of Brasilia (UnB) are organizing in 2016 a workshop where participants from industry and academia will have the opportunity to share their professional knowledge, enlarging their networks in the subject. Some of the most outstanding professionals in CubeSat missions and applications will attend the workshop giving special talks and lectures.

The abstracts of the presented works, found in this volume, are an important sample of the impressive scientific and technological advances in the Cubesat field in Latin America. The workshop organizers have made a great effort to provide a productive environment for papers presentation, knowledge exchange, and new networking opportunities.

The city of Florianopolis, a.k.a. the magic island, is located mainly on the island of Santa Catarina. Florianopolis has also a continental part and surrounding small islands. With a population of around 500,000 people, the city is known for having a very high quality of life. The island is a delicious slice of paradise with over 520 km² (200 sq mi) of green hills, blue lagoons and 42 white sand beaches. The fishing boats, the lace makers, the folklore, the cuisine and the colonial architecture contribute to tourism. The economy of Florianopolis is heavily based on information technology, tourism and services.

Florianopolis is a home to the Federal University of Santa Catarina (UFSC), one of the largest in Brazil, with over 34,500 students. During the symposium, the temperature is expected to be in the range between 22 °C and 30 °C (71.6 °F and 86 °F).

The organizing committee would like to thank everyone for the time spent, and for the volunteering, which made possible to achieve this second edition of the workshop.

Florianopolis, 28 February 2016.

Chantal Cappelletti
Eduardo Augusto Bezerra
Kleber Vieira de Paiva

Workshop Program

Sunday, 28th February 2016

13:00- **Registration**
Hall – Oceania Convention Centre

---Tutorials---

(Chair Prof. Anderson Spengler-UFSC)

14:00-15:30 **Tutorial 1 - “Effective Approach to Cubesat Environmental Testing”, Dario Hermida, European Space Agency**
Agata room

16:00-17:30 **Tutorial 2 - “A Journey Into Space”, Thais Russomano, PUCRS, IAA Member**
Agata room

18:00-19:30 **Tutorial 3 - “Amateur Radio and Space Communications”, Edson W. Pereira, PY2SDR**
Agata room

--- Meeting---

(Chair Prof. Carlos A. Gurgel Veras-AEB)

18:00-19:30 **“Aerospace Engineering Courses Coordinators’ Meeting”, Brazilian Space Agency**
Diamante room

20:00 **Welcome Cocktail Reception**
Diamante room

Monday, 29th February 2016

08:00- **Registration**
Hall – Oceania Convention Centre

08:50-09:00 **Opening ceremony**
Diamante room

---Keynotes---

(Chair Prof. Simone Battistini-UnB)

09:00-09:05 ***“Introduction to the 2nd IAA Latin American CubeSat Workshop”,***
Organizing Committee

Agata room

09:05-09:45 **Keynote – *“International Academy of Astronautics and CubeSat activities”***

Prof. Thais Russomano, IAA

Agata room

09:45-10:00 **Keynote – *“Italy and Latin American Countries: Perspectives for Cooperation in Space Activities”***

Prof. Roberto Bruno, Italian Embassy in Brazil

Agata room

10:00-10:30 **Coffee-break**

Hall

Session 1 – Latin American Projects Overview

(Chair Prof. Simone Battistini-UnB)

Agata room 10:30-12:15

10:30-10:45

IAA-BR-01-01

LESSONS LEARNED BY THE FIRST BRAZILIAN CUBESAT PLATFORM

(Eduardo Escobar Bürger, Geilson Loureiro, Pedro Teixeira Lacava, Cleber Toss Hoffmann, Mateus de Oliveira Pereira)

10:45-11:00

IAA-BR-01-02

PUCP-SAT-3 AND THE STUDY OF TOTAL ELECTRON CONTENT

(Neils Vilchez, Jorge Heraud, Rafael Vilchez, Victor Centa, Jhonnell Fernandez, Daniel Menendez, Gonzalo Tineo and David Torres)

11:00-11:15

IAA-BR-01-03

FIRST SERPENS MISSION

(Gabriel Figuerò de Oliveira, Chantal Cappelletti)

11:15-11:30

IAA-BR-01-04

APPLICABLE SOLUTION FOR OPTIMIZING CRITICAL POINTS ON NANOSATELITE MISSIONS - NANOSATC-BR, CUBESATS DEVELOPMENT PROGRAM

(Lorenzo Mantovani, Marcos Dal Piaz, Artur Slongo, Rodrigo Marques, Alex Muller, Leonardo Da Costa, Pietro Moro, Tâlis Piovesan, Thales Mânica, Tiago Farias, Viktor Dutra, Otávio Durão, Nattan Caetano, Renato Machado and Nelson Schuch.)

11:30-11:45

IAA-BR-01-05

THE FLORIPA-SAT EXPERIENCE: MISSION PROGRESS AND SATELLITE'S DEVELOPMENT

(Leonardo Slongo, Sara Martínez, Bruno Eiterer, Tulio Pereira, Marcos Klemz, Julian Salamanca, Mario Baldini, Rodrigo Pereira, Fabricio Gomes, Djones Lettnin, Leandro Becker, Anderson Spengler, Lucas Travassos, Kleber Paiva and Eduardo Bezerra)

11:45-12:00

IAA-BR-01-06

GNSS-FREE GEO-REFERENCING SYSTEM USING MULTIPLE LEO CUBESAT FORMATION

(Sergio Pamboukian, Pierre Kaufmann, Rodolpho Vilhena de Moraes and Pedro L. Kaufmann)

12:00-12:15

IAA-BR-01-07

CONASAT - NANOSATELLITE CONSTELLATION FOR ENVIRONMENTAL DATA COLLECTION

(Manoel J. M. Carvalho, Jeanne S. S. Lima, Lúcio S. Jotha, Fátima M. Francisco, Otávio C. Durão, Pedro S. Aquino, Carlos L. Gomes Batista and Daniel M. Da Silva.)

12:30-14:30

Lunch

Oceania Convention Centre

Session 2 – Launch Systems and Opportunities

(Chair Prof. Benjamin Kevin Malprhus-MSU)

Agata room 15:00-16:00

15:00-15:15

IAA-BR-02-01

JAMSS SMALL SATELLITE LAUNCH SERVICES OVERVIEW

(Shigeru Imai, Yoshihiko Uemura, Nobuhiko Fukuda and Shigehiro Suzuki)

15:15-15:30

IAA-BR-02-02

GAUSS NEW LAUNCH AND DEPLOYMENT STRATEGIES

(Chantal Cappelletti, Riccardo di Roberto, Filippo Graziani)

15:30-15:45

IAA-BR-02-03

PIGGYBACK PAYLOADS ON THE LAUNCH VEHICLES BY JSC SRC PROGRESS

(Oleg Lagno, Tatiana Lipatnikova and Vadim Yudinsev)

15:45-16:00

IAA-BR-02-04

CUBESAT SEPARATION DYNAMICS

(Vadim Yudinsev)

Session 3 – Modelling

(Chair Prof. Djones Vinicius Lettnin-UFSC)

Agata room 16:00-16:45

16:00-16:15

IAA-BR-03-01

VIRTUAL SATELLITE PLATFORM OF AN ON-BOARD COMPUTER FOR SPACE APPLICATIONS

(Dominic Zijlstra, Rogerio Paludo and Djones Lettnin)

16:15-16:30

IAA-BR-03-02

TOWARDS AN AUTOMATED HYBRID TEST AND SIMULATION FRAMEWORK TO FUNCTIONAL VERIFICATION OF NANOSATELLITES' ELECTRICAL POWER SUPPLY SUBSYSTEM

(Italo Pinto Rodrigues, Ana Maria and Christopher Cerqueira)

16:30-16:45

IAA-BR-03-03

OPTIMIZING 3-COMPONENT FORCE SENSOR INSTALLATION FOR SATELLITE FORCE LIMITED VIBRATION TESTING

(Bob Metz and Carmine Salzano)

16:45-17:00

Coffee-break

Hall

Session 4 – Educational Mission Management and Regulations

(Chair Prof. Thais Russomano-PUCRS)

Agata room 17:00-18:15

17:00-17:15

IAA-BR-04-01

T-PROST: A TRANSDISCIPLINARY PROCESS MODELLING METHODOLOGY AND ITS APPLICATION TO THE SYSTEMS ENGINEERING LIFECYCLE IN SPACE MISSIONS

(Renato Fernandez)

17:15-17:30

IAA-BR-04-02

CUBESAT MISSIONS AS LEARNING TOOLS: THE INFLUENCE ON STUDENTS

(Laio Oriel Seman and Eduardo Augusto Bezerra)

17:30-17:45

IAA-BR-04-03

A DATA CENTER FRAMEWORK FOR TECHNOLOGICAL READINESS ASSESSMENT OF INNOVATIVE TECHNOLOGY ON BOARD CUBESATS

(Andre Novais and Fátima Mattiello-Francisco)

17:45-18:00

IAA-BR-04-04

SIMPLE AND FLEXIBLE MODEL TO ASSESS DIFFERENT SCENARIOS FOR SPACECRAFT POPULATIONS AT LOW-EARTH ORBIT AND ITS SUSTAINABILITY IN THE FUTURE

(Vinicius Bigogno Costa and Hugh G. Lewis)

18:00-18:15

IAA-BR-04-05

AN ENVIRONMENT TO SUPPORT PLM IN SMALL SATELLITES PROJECT DEVELOPMENT

(Renato Fernandez)

Poster Session

(Chair Prof. Marcos Heckler-Unipampa)

Agata Room 18:30-19:30

Tuesday, 1st March 2016

08:00 **Registration**
Hall – Oceania Convention Centre

---Keynotes---

(Chair Prof. Eduardo Augusto Bezerra-UFSC)

09:00-09:30 **Keynote – “From Education to Practical Applications of Micro/nano/pico-satellites in Japan Starting from CubeSat”**
Prof. Shinichi Nakasuka, University of Tokyo, Japan.
Agata room

09:30-10:00 **Keynote – “The Cosmic X-Ray Background NanoSat-2 (CXBN-2): An X-Ray Detector for CubeSats Validated through Science Data”**
Prof. Benjamin Kevin Malprhus, Morehead State University, USA.
Agata room

10:00-10:30 **Coffee-break**
Hall

Session 5 – Assembly, Integration, Test and Verification

(Chair Prof. Eduardo Augusto Bezerra-UFSC)

Agata room 10:30-11:00

10:30-10:45

IAA-BR-05-01

BEHAVIOR MODELLING AND SIMULATION OF A FAULT TOLERANT ATTITUDE DETERMINATION SYSTEM FOR NANOSATC-BR2

(Bruno Caetano O. Miranda and Ricardo de Oliveira Duarte)

10:45-11:00

IAA-BR-05-02

ON THE USE OF NANOSATC-BR TEST SYSTEM FOR PAYLOAD OPERATIONAL REQUIREMENTS VERIFICATION

(Carlos Conceicao, Ana Ambrosio and Fatima Mattiello)

Session 6 – Mission Applications

(Chair Prof. Eduardo Augusto Bezerra-UFSC)

Agata room 11:00-12:15

11:00-11:15

IAA-BR-06-01

SEAHAWK: A CUBESAT MISSION FOR SUSTAINED OCEAN OBSERVATION

(Hazel Jeffrey, Hessel Gorter, Alasdair Gow, Craig Clark, Alan Holmes, John Morrison, Jenni Doonan and Pamela Anderson)

11:15-11:30

IAA-BR-06-02

THE RAIOSAT PROJECT: DETECTING TOTAL LIGHTNING FLASHES FROM A CUBESAT

(Kleber Naccarato, Walter Abrahao Dos Santos, Miguel Carretero, Candido Moura and Auro Tikami)

11:30-11:45

IAA-BR-06-03

RACETRACK TO ORBIT, AN ADDITIVE REVOLUTION

(Twyman Clements, Gil Moore, Mathew Dushku, Stewart Davis, Francesca Cuoghi)

11:45-12:00

IAA-BR-06-04

LAUNCH AND EARLY OPERATIONS PHASE FOR THE GOMX-3 MISSION

(Igor Alonso Portillo, David Gerhart)

12:00-12:15

IAA-BR-06-05

EXTENDING THE COVERAGE FOR THE INTERNET OF THINGS WITH LOW-COST NANOSATELLITE NETWORKS

(Vicente Almonacid and Laurent Franck)

12:30-14:30

Lunch

Oceania Convention Centre

---Keynotes---

(Chair Prof. Eduardo Augusto Bezerra-UFSC)

14:30-15:00

Keynote – “Current NanoSatellite trends and their implications for developing space programs”

Prof. Jordi Puig Suari, CalPoly, USA.

Agata room

Session 7 – Attitude Determination and Control Systems

(Chair Prof. Mikhail Ovchinnikov-KIAM)

Agata room 15:00-16:30

15:00-15:15

IAA-BR-07-01

ATTITUDE CONTROL MODEL FOR CUBESATS

(Juan Carlos Molina, Victor Hugo Ayerdi and Luis Zea)

15:15-15:30

IAA-BR-07-02

STABILIZATION OF A NANOSATELLITE BASED ON FUZZY CONTROL

(Gustavo Mendoza-Torres and Gustavo Rodriguez-Gomez)

15:30-15:45

IAA-BR-07-03

A TEST-BED FOR ATTITUDE AND DETERMINATION CONTROL OF SPACECRAFTS.

(Pedro Beghelli, Simone Battistini, Renato Borges, Chantal Cappelletti, Rodrigo Cardoso da Silva, Ulisses Rodrigues, Sarah Costa, Brenno Popov and Mariana Sampaio)

15:45-16:00

IAA-BR-07-04

THE DESIGNING AND TESTING OF A PASSIVE MAGNETIC ATTITUDE CONTROL SYSTEM FOR FLORIPASAT

(Stefany Dutra, Bruno Lugnani, Lucas Casaril and Alexandro Brito)

16:00-16:15

IAA-BR-07-05

A STAR IDENTIFICATION ALGORITHM USING A NEW METHOD BASED ON A QUASI-EQUILATERAL GEOMETRY

(Berenice Rodríguez Pedroza, Rogerio Enriquez Caldera and Eduardo Mendoza Torres)

16:15-16:30

IAA-BR-07-06

OPTIMIZED CONTROLLER DESIGN FOR CUBESAT ATTITUDE TRACKING CONTROL USING MAGNETIC ACTUATORS

(Felipe Coelho, Andre Da Silva and José R. Pinheiro)

16:30-17:00

Coffee-break

Hall

Session 8 – Structure and Thermal Design

(Chair Prof. Kleber Vieira de Paiva-UFSC)

Agata room 17:00-17:45

17:00-17:15

IAA-BR-08-01

NUMERICAL INVESTIGATION OF THE INFLUENCE OF THE ORBIT INCLINATION ON THERMAL CONTROL OF A NANOSATELLITE IN LEO

(Edemar Morsch Filho, Êmili Bohrer, Kleber Vieira De Paiva, Talita Sauter Possamai and Xisto Lucas Travassos Junior)

17:15-17:30

IAA-BR-08-02

DESIGN OF THE STRUCTURE AND REENTRY SYSTEM FOR THE LAICANSAT-3 PLATFORM

(Matheus F. S. Alves, Arthur P. Wernke, Felipe C. Pereira, Diego H. Gomes, Guilherme S. Lionço, Caio H. Franco L. Domingos, Daniel B. da Trindade, Chantal Cappelletti, Manuel N. D. Barcelos Junior, Simone Battistini and Renato Alves Borges)

17:30-17:45

IAA-BR-08-03

STUDY OF RIGID STRUCTURE VIBRATIONS AND MECHANICAL MODELING FOR THE NANOSATC-BR2: MODAL ANALYSIS AND 3D PRINTING CONSIDERATIONS

(Rodrigo Passos Marques, Viktor Bizarro Dutra, Artur Gustavo Slongo, Lorenzo Quevedo Mantovani, Thaffarel Santos, Tiago Farias, Tális Piovesan, Leonardo Zavareze Da Costa, Pietro Fernando Moro, Thales Ramos Mânica, Alex Müller, Otavio Durão, Nattan Roberto Caetano, Renato Machado and Nelson Schuch)

Industry Session

(Chair Prof. Kleber Vieira de Paiva-UFSC)

Agata 18:00-19:00

20:00-

Social Event – Gala Dinner

Wednesday, 2nd March 2016

08:00 **Registration**
Hall – Oceania Convention Centre

---Keynotes---

(Chair Prof. Simone Battistini-UnB)

09:00-09:30 **Keynote – “Coastwise Sailing: Prospects of Using Solar Sails in Near-Earth Orbits”**
Prof. Mikhail Ovchinnikov, Keldysh Inst. of Applied Mathematics.
Agata room

09:30-10:00 **Keynote – “Programmable Devices in Nano Satellites: Radiation Effects, Fault Tolerance and Integration Perspectives”**
Prof. Fernanda Lima Kastensmidt, UFRGS.
Agata room

10:00-10:30 **Coffee-break**
Hall

Session 9 – On Board Systems (OBC, EPS, P/L) (Chair Prof. Prof. Fernanda Lima Kastensmidt-UFRGS) Agata room 10:30-12:30

10:30-10:50

IAA-BR-09-01

SOFT ERRORS ANALYSIS ON FPGAS FOR CUBESAT MISSIONS
(Victor Martins, Leonardo Slongo, Paulo R. C. Villa and Eduardo Bezerra)

10:50-11:10

IAA-BR-09-02

TETHERED 2U CUBESAT DEVELOPMENT IN SPACE TETHERED
AUTONOMOUS ROBOTIC SATELLITE PROJECT
(Nohmi Masahiro and Yoshiki Yamagiwa)

11:10-11:30

IAA-BR-09-03

OPENOBC: AN OPEN-SOURCE, LOW-COST AND HIGH-
RELIABILITY ARCHITECTURE FOR A CUBESAT ON-BOARD
COMPUTER.
(David Mota, Júlio César Soares Américo Filho, Davyd Melo, Jarbas Silveira, João Cesar Mota and César Augusto Marcon)

11:30-11:50

IAA-BR-09-04

NANOSATELLITE ENERGY HARVESTING MAXIMIZATION
THROUGH AN ENERGY AWARE SCHEDULING ALGORITHM.
(Leonardo Slongo, Eduardo Bezerra, Sara Martínez, Bruno Eiterer and Tulio Gomes Pereira)

11:50-12:10

IAA-BR-09-05

DESIGN CONSIDERATIONS FOR RADIATION HARDENED ASIC
USED AS TECHNOLOGICAL PAYLOAD IN NANOSATC-BR1.
(Jorge Johanny Sáenz Noval, Leonardo Medeiros, João Baptista Dos Santos Martins, Nelson Jorge Schuch, Otávio Dos Santos Cupertino Durão and Renato Machado)

12:10-12:30

IAA-BR-09-06

Electrical Power System (EPS).

(Arnaldo Alves Viana Junior, Otávio Moreira Petito, Tiago Augusto Orcajo, Demay Cordeiro, Alessandro de Oliveira Santos, Saulo Finco, Silvio Manea)

12:30-14:30

Lunch

Oceania Convention Centre

Session 10 – Telecommunications, Tracking and Command

(Chair Prof. Lucas Travassos, UFSC)

Agata room 14:30-16:15

14:30-14:45

IAA-BR-10-01

INTEGRATION OF THE INPE GROUND STATION INTO THE SATNET NETWORK FOR SUPPORTING SMALL SATELLITES PROGRAMS IN BRAZIL

(Ricardo Tubío-Pardavila, Jorge Enrique Espindola Diaz, Adair José Rohling, Fernando Aguado-Agelet, Mauricio Gonçalves Vieira Ferreira, Walter Abrahao Dos Santos and Jordi Puig-Suari)

14:45-15:00

IAA-BR-10-02

BEACON RECEIVERS FOR CUBESAT MISSIONS AND IONOSPHERIC STUDIES

(Edgardo Pacheco and Jose Chavez)

15:00-15:15

IAA-BR-10-03

LAICAnSat-3: A MISSION FOR TESTING A NEW ELECTRONIC AND TELEMETRY AND TRACKING SYSTEM

(Simone Battistini, Rafael Resende Dias, Alex Kraus, Renato Alves Borges and Chantal Cappelletti)

15:15-15:30

IAA-BR-10-04

GROUND STATION LINK CHARACTERIZATION UTILIZING BIT ERROR RATE.

(Nathaniel Richard and Kevin Brown)

15:30-15:45

IAA-BR-10-05

ELECTROMAGNETIC ANALYSIS OF INSTALLED PERFORMANCE OF ANTENNAS INTEGRATED ONTO NANO-SATELLITES

(Juner Vieira and Marcos Heckler)

15:45-16:00

IAA-BR-10-06

PICO AND NANOSATELLITE GROUND STATION ARCHITECTURE DEVELOPMENT REFERENCE PROCESS

(Jaime Enrique Orduy Rodriguez, Geilson Loureiro, Walter Abrahão Dos Santos and Douglas Soares Dos Santos.)

16:30-17:00

Coffee-break

Hall

17:00-17:15

Closing remarks - Diamante room

POSTER SESSION POSTER LIST

(Exhibition in the Hall during the whole workshop)

IAA-BR-16-1P-01

Mission analysis for a remote sensing CubeSat mission over the Amazon rainforest

(Gabriel Coronel, Eduardo Escobar Bürger, Geilson Loureiro and Otávio Luiz Bogossian)

IAA-BR-16-1P-02

SpaceWire Application

(D. T. dos Santos, R. C. Ferrão, V. C. Parroa)

IAA-BR-16-1P-03

Developing and Operating an Automated Ground Station

(Lucas Amaduro, Rogerio Atem De Carvalho, Lucas Hissa, Willian Vianna, Cedric Cordeiro, Sara Souza, William Oliveira, Luiz Gustavo Lourenço Moura)

IAA-BR-16-1P-04

Recycling of Packaging for Obtain Paraffin and Nanoparticles of Aluminum Oxide for Doping of Fuel Used in Hybrid Motors

(Narielly Campos, Luan Henrique Dos Santos Oliveira, Renan Henrique Alves de Araújo, Pilar Falla, Marcelo Bento Silva and Leandro Xavier Cardoso)

IAA-BR-16-1P-05

Developing the Software for Cubesats in a Concurrent Engineering Environment: a toolset and case study

(Rogerio Atem De Carvalho, Galba Arueira, Milena Silveira de Azevedo, Rafael Toledo and Cedric Cordeiro)

IAA-BR-16-1P-06

CubeSat Frame Design - Petal Model

(Felipe Lima Mahlmeister, Rodrigo Alvite Romano, Vanderlei Cunha Parro, Rafael Corsi Ferrão, Sergio Ribeiro Augusto, Saulo Finco and Silvio Manea)

IAA-BR-16-1P-07

A SysML reference model to satellite/launcher interface and its instantiation to a Cubesat Project

(Ricardo Franco and Walter Abrahao Dos Santos)

IAA-BR-16-1P-08

Serpens: assembly, integration and test activities

(Ishioka, I. S. K.; Figueiró de Oliveira, G.; Cappelletti, C.; Amui, B. G. R.; Lôpo Júnior, N. P.; Kaled da Cás, P. L.; Nodar, D.; González, A.; Aguado Agelet, F.; Vázquez, A)

IAA-BR-16-1P-09

Low Outgassing Accelerometers and Cables for Thermal Vacuum and Vibration Test Environments

(Bob Metz and Carmine Salzano)

IAA-BR-16-1P-10

Experimental Analysis of Thermoelectric Energy Generation for Nanosatellites

(Diego Audiffred, Anderson Spengler, Kleber Paiva, Gabriel Fraporti and Gabriella Hagedorn)

IAA-BR-16-1P-11

Remote Sensing based on Cubesat: is there any added value?

(Giovanni LaNeve, Giancarlo Santilli)

IAA-BR-16-1P-12

Orchestration and Controlling of a Automated Ground Station Network

(Lucas Hissa, Luiz Gustavo Lourenço Moura, Rogério Atem, Lucas Amaduro, William Silva Vianna, Cedric Salotto Cordeiro and Sara Souza)

IAA-BR-16-1P-13

Ablative Pulsed Plasma Thrusters for high Delta-V

Nanosatellite/Microsatellite Missions

(Paolo Gessini, Lui T. C. Habl, Gabriela Possa, Stephen B. Gabriel)

IAA-BR-16-1P-14

Development of a small Thermal-Vacuum chamber using systems engineering philosophy

(Roy Stevenson Soler Chisabas, Eduardo Escobar Bürger and Geilson Loureiro)

IAA-BR-16-1P-15

Microstrip planar antenna for cubesats

(Marcio Mathias, Gabriel Vilella Matos, Saulo Finco, Silvio Manea)

IAA-BR-16-1P-16

Functional verification of a hardware satellite communication module

(Fabrízio Maziero and DJones Lettnin)

IAA-BR-16-1P-17

Design and optimization of ground station antennas for the floripa sat project

(Thais Baena Moura, Raíza Benedecti and Lucas Travassos)