

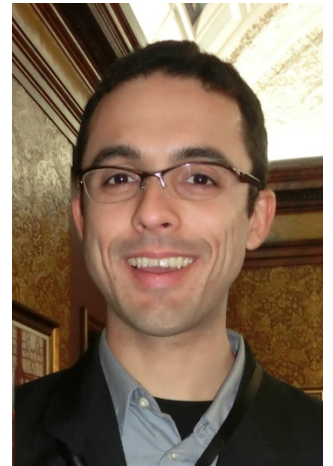
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Jan. 1999 – Dec. 2000 Technician in Computer Science at CEETEPS (Educational Center Paula Souza), Cruzeiro-SP, Brazil.

Jan. 2001 – Dec. 2005 Bachelor in Material Engineering at USP – EEL, University of São Paulo, Lorena-SP, Brazil.

- Finished with the second highest grade of his group (82%)

Feb. 2005 – Sep. 2006 Internship and Research Assistant at National Siderurgical Company, (CSN – “Companhia Siderúrgica Nacional”), Volta Redonda-RJ.

- Development of Next Generation Refractories and Ceramic Materials

Oct. 2006 – Jan. 2008 Embraer SA, Engineering Specialization Program, São José dos Campos-SP, Brazil.

- Focus on Stress Analysis. Group’s leader for the structural design
- Calculated aircraft’s composite wing
- Focal point for all aircraft’s CATIA drawings

Feb. 2008 – Jul. 2010 Embraer SA, Product Development Engineer: Stress Engineer.

- Calculation of aircraft composite parts, aircraft floor, aircraft cabin
- Development of finite element models for metallic and composite parts
- Developed new enveloping technique to reduce cost with stress analysis of new aircraft configurations (ModeFrontier, VBA Programming in Excel, MSC Nastran)
- Developed new method to calculate reaction loads at cargo attachments for any general configuration

Feb. 2008 – Sep. 2009 Master of Science in Aeronautical Engineering at ITA (Aeronautical Technology Institute), São José dos Campos-SP, Brazil.

- Thesis: “Efficient Optimization of Composite Wing using Genetic Algorithms”
- ModeFrontier, VBA Programming in Excel, Optistruct Solver

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- Embraer SA, Product Development Engineer: CAE Specialist.
- Jul. 2010 – Jan. 2012
- Support Stress Analysis groups with:
 - Linear, Nonlinear static, transient analyzes: MSC Nastran, MSC Marc Abaqus, Optistruct
 - Pre- and Post- Processing: FEMAP, Patran, Abaqus CAE, HyperMesh
 - Automated design of wing structures (VBA Programming in CATIA, Python, TCL Programming in HyperMesh, MSC SimXpert)
 - Development of stress analysis automated processes in Python and VBA
-

- Research Assistant at the Private University of Applied Sciences Göttingen (PFH) during the DESICOS Project (www.desicos.eu).
- Feb. 2012 – Jan. 2015
- Investigated effect of geometric and load imperfections on the instability behavior of thin-walled cylindrical and conical shells, stiffened and unstiffened
 - Leader developer of DESICOS improved software (Abaqus plugin written in Python, available at <https://github.com/desicos/desicos>)
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- PhD, Doctor of Engineering (Dr.-Ing.) with “summa cum laude” at the Technical University of Clausthal, Germany.
- Feb. 2012 – Dec. 2014
- Thesis: “Semi-Analytical Tools for the Analysis of Laminated Composite Cylindrical and Conical Imperfect Shells under Various Loading and Boundary Conditions” ([see here](#))
 - Python, Cython, C/C++, FORTRAN
-

- Embraer SA, Product Development Engineer: CAE Specialist.
- Jan. 2015 – Present
- Consultant for Stress Analysis teams in linear and non-linear analyses, mainly in Nastran, Abaqus and Marc and its related pre- and post- processors (FEMAP, PATRAN, Hypermesh, Abaqus CAE)
 - Development of automations in CATIA (C++ and VBA)
 - Lecturer for the Course “Advanced Optimization in MSC Nastran’s SOL 200 and Optistruct”
 - Topological Optimization, Design for Manufacturability
 - Extensive use of DRESP2 and DRESP3 to achieve realistic design constraints
 - Semi-analytical external subroutines in FORTRAN to calculated constraints (panel buckling, crippling, effective width and so forth)
 - Development of new stress analysis methods and processes
 - Development of method to generate actuator loads in structural tests that best-fits theoretical loads for full-scale static and fatigue tests
 - Project leader for Embraer’s new stress analysis platform
 - Conversion of Excel-based tools to C++ and Python
 - Implemented concept of structural analysis solvers
 - Certification process facilitated by full traceability of analysis data
 - Use of high-performance computing
 - Project leader for Embraer’s next generation Fatigue Solver and Fatigue Calculation Process
 - Dispenses need of stress transfer functions
 - State of the art accuracy for fatigue analysis
 - Participation in several Master Thesis Examination Committees and Co-Orientation of Master Students at the Aeronautical Technology Institute, Brazil
 - Project management performed with the Agile concept using JIRA
 - Specialist in version control of Engineering Methods, Tools and Processes using Git and SVN
-

List of Publications ([see here](#))

Book: Stability and Vibrations of Thin-Walled Composite Structures

ISBN: 9780081004104

Edited by Haim Abramovich

Technion, I.I.T., Haifa, Israel

Authored Chapters:

7.2 Geometric imperfections and lower-bound methods used to calculate knockdown factors for composite cylindrical shells

7.3 Semianalytical approaches for linear and nonlinear buckling analyses of imperfect composite cylinders under axial, torsional, and pressurization loads

Indexed Papers:

Odeny Dias de Matos Junior, Mauricio V. Donadon, Saullo G. P. Castro. "Aeroelastic Behavior of Stiffened Composite Laminated Panel with Embedded SMA Wire using the Hierarchical Rayleigh–Ritz Method".

Composite Structures, Vol. 181, Pages 26-45, December, 2017. [View/Download](#)

Regina Khakimova, Saullo G. P. Castro, Dirk Wilckens, Klaus Rohwer, Richard Degenhardt. "Buckling of axially compressed CFRP cylinders with and without additional lateral load: experimental and numerical investigation". Thin-Walled Structures, Vol. 119, Pages 178-189, October, 2017. [View/Download](#)

Saullo G. P. Castro, Maurício V. Donadon. "Assembly of Semi-Analytical models to Address Linear Buckling and Vibration of Stiffened Composite Panels with Debonding Defect". Composite Structures, [Vol. 160](#), Pages 232–247, January, 2017. [View/Download](#)

Saullo G. P. Castro, Thiago A. M. Guimarães, Domingos A. Rade, Maurício V. Donadon. "Flutter of stiffened composite panels considering the stiffener's base as a structural element". Composite Structures, Vol. 140, Pages 36-43, April 2016. [View/Download](#) [Audio Slides](#)

Kaspars Kalnins, Mariano A. Arbelo, Olgerts Ozolins, Eduards Skukis, Saullo G. P. Castro, Richard Degenhardt. "Experimental non-destructive test for estimation of buckling load on unstiffened-cylindrical shells using vibration correlation technique". Shock and Vibration, Vol. 2015, Article ID 729684, 8 pages. [View/Download](#)

Regina Khakimova, Florian Bureau, Richard Degenhardt, Mark Siebert, Saullo G. P. Castro. "Design and manufacture of conical shell structures using prepreg laminates". Applied Composite Materials. (2016) 23: 289. [View / Download](#)

Mariano A. Arbelo, Kaspars Kalnins, Olgerts Ozolins, Eduards Skukis, Saullo G. P. Castro, Richard Degenhardt. "Experimental and numerical estimation of buckling load on unstiffened cylindrical shells using a vibration correlation technique". Thin-Walled Structures, Vol. 94, Pages 273-279, September 2015. [View/Download](#)

Saullo G. P. Castro, Christian Mittelstedt, Francisco A. C. Monteiro, Mariano A. Arbelo, Richard Degenhardt, Gerhard Ziegmann. "A semi-analytical approach for linear and non-linear analysis of unstiffened laminated composite cylinders and cones under axial, torsion and pressure loads". Thin-Walled Structures, Vol. 90, Pages 61-73, May, 2015. [View/Download](#) [Audio Slides](#)

Saullo G. P. Castro, Christian Mittelstedt, Francisco A. C. Monteiro, Richard Degenhardt, Gerhard Ziegmann. "Evaluation of non-linear buckling loads of geometrically imperfect composite cylinders and cones with the Ritz method". Composite Structures, Vol. 122, Pages 284-299, April, 2015. [View/Download](#) [Audio Slides](#)

Mariano A. Arbelo, Annemarie Herrmann, Saullo G. P. Castro, Regina Khakimova, Rolf Zimmermann, Richard Degenhardt. "Investigation of buckling behavior of composite shell structures with cutouts". Applied Composite Materials, November, 2014. [View/Download](#)

Saullo G. P. Castro, Christian Mittelstedt, Francisco A. C. Monteiro, Mariano A. Arbelo, Gerhard Ziegmann, Richard Degenhardt. "Linear buckling predictions of unstiffened laminated composite cylinders and cones under various loading and boundary conditions using semi-analytical models". Composite Structures, Vol. 118, Pages 303-315, December 2014. [View/Download](#) [Audio Slides](#)

Regina Khakimova, Christopher J. Warren, Rolf Zimmermann, Saullo G. P. Castro, Mariano A. Arbelo, Richard Degenhardt. "The single perturbation load approach applied to imperfection sensitive conical composite structures". Thin-Walled Structures, Vol. 84, Pages 369-377, November 2014. [View/Download](#)

Maria Francesca Di Pasqua, Regina Khakimova, Saullo G. P. Castro, Mariano A. Arbelo, Aniello Riccio, Richard Degenhardt. "The influence of geometrical parameters on the buckling behavior of conical shells by the single perturbation load approach". Applied Composite Materials, DOI 10.1007/s10443-014-9414-3, September 2014. [View/Download](#)

Richard Degenhardt, Saullo G. P. Castro, Mariano A. Arbelo, Rolf Zimmermann, Regina Khakimova, Alexander Kling. Future structural stability design for composite space and airframe structures. Thin-Walled Structures, Vol. 81, Pages 29-38, August 2014. [View/Download](#)

Mariano A. Arbelo, Sérgio F. M. de Almeida, Maurício V. Donadon, Sandro R. Rett, Richard Degenhardt, Saullo G. P. Castro, Kaspars Kalnins, Oļģerts Ozoliņš. Vibration correlation technique for the estimation of real boundary conditions and buckling load of unstiffened plates and cylindrical shells. Thin-Walled Structures, Vol. 79, Pages 119-128, June 2014. [View/Download](#)

Mariano A. Arbelo, Richard Degenhardt, Saullo G. P. Castro, Rolf Zimmermann. Numerical characterization of imperfection sensitive composite structures. Composite Structures, Vol. 108, Pages 295-303, February 2014. [View/Download](#)

Saullo G. P. Castro, Rolf Zimmermann, Mariano A. Arbelo, Regina Khakimova, Mark W. Hilburger, Richard Degenhardt. Geometric imperfections and lower-bound methods used to calculate knock-down factors for axially compressed composite cylindrical shells. Thin-Walled Structures, Vol. 74, Pages 118–132, January 2014. [View/Download](#)

Saullo G. P. Castro, Rolf Zimmermann, Mariano A. Arbelo, Richard Degenhardt. Exploring the constancy of the global buckling load after a critical geometric imperfection level in thin-walled cylindrical shells for less conservative knock-down factors. Thin-Walled Structures, Vol. 72, Pages 76–87, November 2013. [View/Download](#)

Contributions to Public Software ([see here](#))

Saullo G. P. Castro. Computational Mechanics Tools. Version 0.7.2, 29th of August 2016. [Online]. Available: <http://compmech.github.io/compmech/>.

Saullo G. P. Castro, Jasper Reichardt, Florian Burau, et. al, "DESICOS Improved Software Version 2.4.10," 29th of August 2017. [Online]. Available: <https://github.com/desicos/desicos>.

Steve Doyle, Saullo G. P. Castro. PyNastran. Version 1.0.0, 25th of May 2017. [Online]. Available: <https://github.com/stevedoyle2/pynastran>.

Saullo G. P. Castro, Anton Loukianov. Cubature. Version 0.13.3, 29th of May 2017. [Online]. Available: <https://github.com/saullocastro/cubature>.

Saullo G. P. Castro. Meshless Methods for Computational Mechanics. Version 0.1.19, 17th of May 2017. [Online]. Available: <https://github.com/compmech/meshless>.