DIEGO MAGELA LEMOS

Ph.D. candidate in Mechanical Engeneering

Personal Information

birth	Brazil, 02 May 1995
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Goal

Develop computational tools to perform realible and high performance simulations.

Education

2021–present University of São Paulo (USP)

Doctor of Science

Mechanical Engineering
São Carlos School of Engineering (EESC)
Title: *Nonlinear flutter of bistable composite plates*
Keywords: Nonlinear aeroelasticity · Nonlinear Finite Element Method · Computational Aerodynamics · C/C++ · Python
Advisor: Assoc. Prof. Flávio D. Marques

2017–2021 Federal University of Minas Gerais (UFMG)

Master of Science

Structural Engineering
Title: *In-plane and buckling analysis of variable angle tow composites*
Keywords: Composite structures · Finite Element Method · Buckling of plates · Mathematica · Python
Advisor: Full Prof. Carlos A. Cimini Jr.

2013–2017 Federal University of São João del-Rei (UFSJ)

Bachelor of Science

Mechanical Engineering
Title: *Previsão da potência de eixo de uma turbina eólica através do método Blade Element Momentum*
Keywords: Blade Element Momentum · Aerodynamics · MATLAB · Fortran
Advisor: Assist. Prof. Daniel S. Souza

Publications

Journal papers

D. M. Lemos and C. A. Cimini Jr., "Comparison between a linear and cubic fiber angle variation on buckling response of variable angle tow composite panels," *Latin American*

Journal of Solids and Structures, vol. 18, no. 6, e389, 2021, ISSN: 1679-7825. DOI: 10.1590/1679-78256464

Book chapters

P. T. Rodrigues, D. M. Lemos, C. Pagani, *et al.*, "Metodologias alternativas para geração de curvas polares para o método blade element momentum," in *Tendências e avanços científicos nas engenharias: aeronáutica, aeroespacial, eletrônica e de telecomunicações*, D. P. S. d. Santos, Ed., 1st ed., Campina Grande: Editora Amplla, 2022. DOI: 10.51859/amplla.tac372.1122-7

Proceedings

D. M. Lemos and F. D. Marques, "The dynamic snap-through response of bistable cross-ply composite plates," in *Proceedings of the 6th Brazilian Conference on Composite Materials*, R. da Silva and T. Panzera, Eds., Tiradentes, 2022. DOI: 10.29327/566492

D. M. Lemos and C. A. Cimini Jr., "Use of variable angle tow composites for plates under compressive load," in *Proceedings of the 5th Brazilian Conference on Composite Materials*, V. Tita, J. R. Tarpari, and M. L. Ribeiro, Eds., São Carlos, 2021, ISBN: 978-65-86954-05-0

P. T. Rodrigues, D. M. Lemos, C. Pagani, *et al.*, "Blade element momentum simulations using polars extracted from wind-turbine-model experiments," in *Proceedings of the 26th International Congress of Mechanical Engineering*, Florianópolis, 2021. DOI: 10.26678/abcm.cobem2021.cob2021-0959

D. M. Lemos, P. O. De Souza, and A. B. G. Franco, "The risk of fracture of an endodontically treated tooth in osteoporotic bone," in *Proceedings of the 25th International Congress of Mechanical Engineering*, Uberlândia, 2019. DOI: 10.26678/ABCM.COBEM2019.COB2019-2102

D. M. Lemos and C. A. Cimini Jr., "Potencial do uso de compósitos VAT (Variable Angle Tow) em placas sob carregamento de flambagem," in *Anais do XXII Encontro Nacional de Modelagem Computacional e o X Encontro de Ciência e Tecnologia de Materiais*, Juiz de Fora, 2019

P. O. De Souza, D. M. Lemos, and A. B. G. Franco, "Stress analysis in a post-restored tooth in osteoporotic bone," in *Anais do XXII Encontro Nacional de Modelagem Computacional e X Encontro de Ciência e Tecnologia de Materiais*, Juiz de Fora, 2019

D. M. Lemos and D. S. Souza, "Previsão da potência de eixo de uma turbina eólica através do método blade element momentum," in *Anais do XIII Simpósio de Mecânica Computacional*, Vitória, 2018

D. M. Lemos, C. C. S. Araujo, P. A. L. El-Corab, *et al.*, "Previsão da potência de eixo de uma turbina eólica de duas pás," in *Anais do VII Congresso de Engenharias*, São João del-Rei, 2017

Academic experience

2014 — Teaching Assistant · Calculus II

UFSJ — Integration methods · Multivariable calculus · Partial derivatives

2015 Teaching Assistant · Dynamics

UFSJ Kinematics and kinetics of a particle · Kinematics and kinetics of rigid bodies

2016 Teaching Assistant · Fluid Mechanics II

UFSJ Internal and external incompressible viscous fluid · Compressible flow

2017 Undergraduate Researcher

UFSJ Development of a computational tool to analyze wind turbine blades aerodynamics.
Keywords: Fortran, MATLAB, Linux, Blade Element Momentum Method.

Computer Skills

Basic Bash · Git · Fortran

Intermediate MATLAB · Mathematica

Advanced C/C++ · Python · Linux · LaTeX

Other Information

Languages Portuguese · Native speaker

English · Advanced (reading, writing, and speaking)

Research interests Aeroelasticity · Structural Dynamics · Composite Structures · Computational Aerodynamics · Finite Element Method · Computational Fluid Dynamics

References

Academic advisors

Flávio D. Marques
University of São Paulo
Associate Professor
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Federal University of Minas Gerais
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São Paulo State University
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