



Assistant Professor Guilherme Rosa Franzini

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Guilherme Rosa Franzini
*Department of Structural and
Geotechnical Engineering
Escola Politécnica da USP, SP, Brazil
Office 39
Phone: +55(11) 3091-5572
E-mail: gfranzini@usp.br
<http://lattes.cnpq.br/9626594300258698>*

Research interests

- Linear and non-linear dynamics of structures;
- Fluid-structure interaction;
- Experimental analysis of structures;
- Energy harvesting from fluid-structure interaction;
- Parametric excitation problems;
- Experimental and theoretical investigations into vortex-induced vibration phenomenon (phenomenological models);
- Structural analysis of wind turbines;

Research projects

- 2017 - present: Numerical investigations on passive suppression of vortex-induced vibrations and parametric instability phenomena using non-linear energy sink (financial support from São Paulo Research Foundation - FAPESP). Coordinator.
- 2014 - 2016: Energy harvesting from vortex-induced vibration (financial support from USP Research Committee): Coordinator.
- 2016 - present: Computational Tools for Research on Floating Wind Turbines (financial support from USP Research Committee): Participant.
- 2016 - present: Research topics on fluid-structure interaction phenomena (financial support from Brazilian Council for Research - CNPq). Coordinator.

Education

- 2013: Post-Doctoral Research Fellow - Escola Politécnica - University of São Paulo, Brazil;
- 2008-2012: PhD in Sciences - Escola Politécnica - University of São Paulo, Brazil;
- 2003-2007: Naval Engineer - Escola Politécnica - University of São Paulo, Brazil.

Academic employment

- 2014 - present: Assistant Professor at the Department of Structural and Geotechnical Engineering - Escola Politécnica - University of São Paulo, Brazil.
- December, 2017 - February, 2018: Visiting researcher at École Polytechnique de Montréal

Journal papers

1. **Franzini, G.R.**; Pesce, C.P. ; Gonçalves, R.T. ; Fajarra, A.L.C. ; Mendes, P. “An Experimental Investigation on Concomitant Vortex-Induced Vibration and Axial Top-Motion Excitation with a Long Flexible Cylinder in Vertical Configuration”. *Ocean Engineering (accepted)*, 2018.
2. Souza, F.L.; Tannuri, E.A.; Mello, P.C.; **Franzini, G.R.**; Mas-Soler, J.; Simos, A.N. “Bayesian Estimation of Directional Wave Spectrum using Vessel Movements and Wave-Probes: Proposal and Preliminary Experimental Validation”. *International Journal of Offshore Mechanics and Arctic Engineering (accepted)*, 2018.
3. **Franzini, G.R.**; Bunzel, L.O. “A numerical investigation on piezoelectric energy harvesting from Vortex-Induced Vibrations with one and two degrees of freedom”. *Journal of Fluids and Structures*, v. 77, p. 196-212, 2018.
4. **Franzini, G.R.**; Santos, R.C.S.; Pesce, C.P. “A numerical study on piezoelectric energy harvesting by combining transverse galloping and parametric instability phenomena”. *Journal of Marine Science and Application*, online, 2017.
5. **Franzini, G.R.**; Santos, C.C.P. ; Mazzilli, C.E.N. ; Pesce, C.P. “Parametric excitation of an immersed, vertical and slender beam using reduced-order models: influence of hydrodynamic coefficients”. *Marine Systems & Ocean Technology*, v. 11, p. 10-18, 2016.
6. **Franzini, G.R.**; Mazzilli, C.E.N. “Non-linear reduced-order model for parametric excitation analysis of an immersed vertical slender rod”. *International Journal of Non-Linear Mechanics*, v. 80, p. 29-39, 2016.
7. **Franzini, G.R.**; Pesce, C.P.; Salles, R.; Gonçalves, R.T.; Fajarra, A.L.C.; Mendes, P. “Experimental analysis of a vertical and flexible cylinder in water: Response to top motion excitation and parametric resonance”. *Journal of Vibration and Acoustics*, v. 137, p. 031010, 2015.
8. Rabelo, M.A.; Pesce, C. P. ; Santos, C.C.P.; Ramos Jr., R.; **Franzini, G. R.** ; Gay Neto, A. “An investigation on flexible pipes birdcaging triggering”. *Marine Structures*, v. 40, p. 159-182, 2015.
9. Gonçalves, R.T.; **Franzini, G.R.**; Rosetti, G.F.; Meneghini, J.R.; Fajarra, A.L.C. “Flow around circular cylinders with very low aspect ratio”. *Journal of Fluids and Structures*, v. 50, p. 122-141, 2015.
10. **Franzini, G. R.**; Gonçalves, R. T.; Meneghini, J. R.; Fajarra, A.L.C. “Experimental Investigation into the Flow Around a Stationary and Yawed Cylinder Under Asymmetrical End Conditions”. *International Journal of Offshore and Polar Engineering*, v. 24, p. 90-97, 2014.
11. **Franzini, G.R.**; Gonçalves, R.T.; Pesce, C.P.; Fajarra, A.L.C.; Mazzilli, C.E.N. ; Meneghini, J.R. ; Mendes, P. “Vortex-induced vibration experiments with a long semi-immersed flexible cylinder under tension modulation: Fourier transform and Hilbert-Huang spectral analyses”. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, v. 36, p. 1-11, 2014.
12. Gonçalves, R.T.; Rosetti, G.F.; **Franzini, G.R.**; Meneghini, J.R.; Fajarra, A.L.C. “Two-degree-

of-freedom vortex-induced vibration of circular cylinders with very low aspect ratio and small mass ratio”. *Journal of Fluids and Structures*, v. 39, p. 237-257, 2013.

13. **Franzini, G.R.**; Gonçalves, R.T.; Meneghini, J.R.; Fajarra, A.L.C. “One and Two degrees-of-freedom Vortex-Induced Vibration Experiments with Yawed Cylinders”. *Journal of Fluids and Structures*, v. 42, p. 401-420, 2013.
14. **Franzini, G.R.**; Pesce, C. P.; Gonçalves, R. T.; Fajarra, A.L.C.; Pereira, A.A.P. “Concomitant vortex-induced vibration experiments: a cantilevered flexible cylinder and a rigid cylinder mounted on a leaf-spring apparatus”. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, p. 1-12, 2013.
15. Gonçalves, R.T.; Freire, C.M.; Rosetti, G.F; **Franzini, G.R.**; Meneghini, J.R.; Fajarra, A.L.C. “Experimental Comparison of Two Degrees-of-Freedom Vortex-Induced Vibration on High and Low Aspect Ratio Cylinders with Small Mass Ratio”. *Journal of Vibration and Acoustics*, v. 134, p. 061009, 2012.
16. Gonçalves, R. T.; **Franzini, G.R.**; Rosetti, G. F.; Fajarra, A.L.C.; Nishimoto, K. “Analysis Methodology for Vortex-Induced Motion (VIM) of a Monocolumn Platform Applying the Hilbert Huang Transform Method”. *Journal of Offshore Mechanics and Arctic Engineering*, v. 134, p. 011103, 2012.
17. **Franzini, G.R.**; Fajarra, A.L.C.; Meneghini, J.R.; Korkischko, I.; Franciss, R. “Experimental investigation of Vortex-Induced Vibration on rigid, smooth and inclined cylinders”. *Journal of Fluids and Structures*, v. 25, p. 742-750, 2009.

Proceedings of Conferences (full paper)

1. Orsino, R.M.M. ; Pesce, C.P. ; **Franzini, G.R.** “Cantilevered pipe ejecting fluid under VIV: Non-linear reduced order modeling and analysis”. *In: 24th ABCM International Congress of Mechanical Engineering, 2017, Curitiba. Proceedings of the 24th ABCM International Congress of Mechanical Engineering, 2017.*
2. Defensor Filho, W.A.; Pesce, C.P.; **Franzini, G.R.** “Investigation of the high energy mode branch in flexible cylinders VIV: A novel recursive experimental analysis methodology”. *In: 24th International Congress of Mechanical Engineering - COBEM2017, 2017, Curitiba. Proceedings of the 24th International Congress of Mechanical Engineering - COBEM2017, 2017.*
3. Bunzel, L.O.; **Franzini, G.R.** . “Numerical studies on piezoelectric energy harvesting from vortex-induced vibrations considering cross-wise and in-line oscillations”. *In: 9th European Nonlinear Dynamics Conference, 2017, Budapest. Proceedings of the 9th European Nonlinear Dynamics Conference, 2017.*
4. **Franzini, G.R.**; Sato, B.S.; Campedelli, G.R. “Numerical analysis of a non-linear energy sink (NES) for the parametric excitation of a submerged cylinder”. *In: 9th European Nonlinear Dynamics Conference, 2017, Budapest. Proceedings of the 9th European Nonlinear Dynamics Conference, 2017.*
5. Souza, F.L.; Tannuri, E.A.; Mello, P.C.; **Franzini, G.R.**; Mas-Soler, J.; Simos, A.N. “Bayesian Estimation of Directional Wave Spectrum using Vessel Movements and Wave-Probes: Proposal and Preliminary Experimental Validation.” *In: 36th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2017, Trondheim. Proceedings of the 36th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2017.*
6. Santos, C.C.P.; Pesce, C.P.; Salles, R.; **Franzini, G.R.**; Gonçalves, R.T. ; Morini, R. “An Ex-

- perimental Assessment of the Hysteresis Behavior of Umbilical Cables Under Cyclic Traction”. In: *36th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2017, Trondheim. Proceedings of the 36th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2017.*
7. Pesce, C.P.; Franzini, G.R.; Fajarra, A.L.C.; Gonçalves, R.T.; Salles, R.; Mendes, P. “Further Experimental Investigations on Vortex Self-Induced Vibrations (VSIV) with a Small-Scale Catenary Riser Model”. In: *36th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2017, Trondheim. Proceedings of the 36th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2017.*
 8. Beraldo, H.C.; **Franzini, G.R.** “Dynamic Nonlinear Analysis of a Wind Turbine Tower”. In: *6th International Symposium on Solid Mechanics - MECSOL2017, 2017, Joinville. Proceedings of the 6th International Symposium on Solid Mechanics - MECSOL2017, 2017.*
 9. **Franzini, G.R.**; Pesce, C.P.; Gonçalves, R.T.; Fajarra, A.L.C.; Mendes, P. “Experimental Investigations on Vortex-Induced Vibrations with a long flexible cylinder. Part I: Modal-amplitude analysis with a vertical configuration”. In: *11th International Conference on Flow-Induced Vibration, 2016, The Hague. Proceedings of the 11th International Conference on Flow-Induced Vibration, 2016.*
 10. **Franzini, G.R.**; Pesce, C.P.; Gonçalves, R.T.; Fajarra, A.L.C.; Mendes, P. “Experimental investigations on Vortex-Induced Vibrations with a long flexible cylinder. Part II: effect of axial motion excitation in a vertical configuration”. In: *11th International Conference on Flow-Induced Vibration, 2016, The Hague. Proceedings of the 11th International Conference on Flow-Induced Vibration, 2016.*
 11. Rateiro, F. ; Fajarra, A.L.C. ; Pesce, C.P. ; Gonçalves, R.T. ; **Franzini, G.R.** ; Mendes, P. “Experimental Investigations on Vortex-Induced Vibrations with a long flexible cylinder. Part III: Modal-amplitude analysis with a catenary configuration”. In: *11th International Conference on Flow-Induced Vibration, 2016, The Hague. Proceedings of the 11th International Conference on Flow-Induced Vibration, 2016.*
 12. **Franzini, G.R.**; Santos, R.C.S. ; Pesce, C.P. “Energy harvesting from transverse galloping enhanced by parametric excitation”. In: *11th International Conference on Flow-Induced Vibration, 2016, The Hague. Proceedings of the 11th International Conference on Flow-Induced Vibration, 2016.*
 13. Santos, C.C.P. ; Pesce, C.P. ; **Franzini, G.R.** ; Otte Filho, O.O. An experimental assessment on umbilical cable crushing using Digital Image Correlation. In: *35th International Conference on Ocean, Offshore Mechanics and Arctic Engineering - OMAE 2016, 2016, Busan. Proceedings of the 35th International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2016.*
 14. **Franzini, G.R.**; Gay Neto, A. “Numerical investigations on parametric excitation of a vertical beam under prescribed axial displacements”. In: *The 22nd International Congress on Sound and Vibration, 2015, Florence. Proceedings of the 22nd International Congress on Sound and Vibration, 2015.*
 15. **Franzini, G.R.**; Mazzilli, C.E.N.; Pesce, C.P. “Reduced-order model for parametric excitation of a submerged, vertical and flexible cylinder: a calibration approach study”. In: *XVII International Symposium on Dynamic Problems of Mechanics - DINAME 2015, 2015, Natal. Proceedings of the XVII International Symposium on Dynamic Problems of Mechanics - DINAME 2015, 2015.*
 16. Santos, C.C.P. ; Pesce, C.P. ; Salles, R. ; **Franzini, G.R.** ; Tanaka, R.L. “A Finite Element Model for umbilical cable crushing analysis. In: *34th International Conference on Ocean, Offshore Mechanics and Arctic Engineering - OMAE 2015, 2015, St. John's. Proceedings of the 34th*

International Conference on Ocean, Offshore Mechanics and Arctic Engineering, 2015”.

17. **Franzini, G.R.**; Pesce, C.P.; Salles, R. ; Gonçalves, R.T. ; Fajarra, A.L.C. ; Mendes, P. “Experimental analysis of a vertical and flexible cylinder in water: Response to top motion excitation and parametric resonance”. In: *ASME 2014 33rd International Conference on Ocean, Offshore and Arctic Engineering - OMAE2014, 2014, San Francisco. Proceedings of the 33rd International Conference on Ocean, Offshore and Arctic Engineering*, 2014.
18. **Franzini, G.R.**; Gonçalves, R.T.; Pesce, C.P.; Fajarra, A.L.C.; Mazzilli, C.E.N. ; Meneghini, J.R. ; Mendes, P. “Vortex-Induced Vibrations Experiments With a Very Flexible Cylinder Under Tension Modulation: Fourier Transform and Hilbert-Huang Spectral Analysis”. In: *XV International Symposium on Dynamic Problems of Mechanics - DINAME13, 2013, Búzios. Proceedings of the XV International Symposium on Dynamic Problems of Mechanics*, 2013.
19. Gay Neto, A.; **Franzini, G.R.**; Martins, C.A.; Pesce, C.P.; Malta, E.R. “Crush Behavior of Multilayered pipes: study of integrity and kinematic assumptions”. In: *32nd International Conference on Ocean, Offshore and Arctic Engineering., 2013, Nantes. Proceedings of the 32th International Conference on Ocean, Offshore and Arctic Engineering*, 2013.
20. Rateiro, F.; Gonçalves, R.T.; Pesce, C.P.; Fajarra, A.L.C.; **Franzini, G.R.**; Mendes, P. “A Model scale experimental investigation on Vortex-Self Induced Vibrations (VSIV) of catenary risers”. In: *32nd International Conference on Ocean, Offshore and Arctic Engineering, 2013, Nantes. Proceedings of the 32nd International Conference on Ocean, Offshore and Arctic Engineering*, 2013.
21. Gonçalves, R. T.; Rosetti, G.F.; **Franzini, G.R.**; Fajarra, A.L.C. “Experimental study on flow around circular cylinders with low aspect ratio”. In: *32nd International Conference on Ocean, Offshore and Arctic Engineering., 2013, Nantes. Proceedings of the 32nd International Conference on Ocean, Offshore and Arctic Engineering*, 2013.
22. Pesce, C.P.; **Franzini, G.R.**; Rabelo, M.A.; Ramos Jr., R.; Gonçalves, R.T.; Tanaka, R.L.; Barbosa, T.F.; Godinho, C.A. “A Nonlinear Analytical Model for Flexible Pipe Crushing Analysis”. In: *31st International Conference on Ocean, Offshore and Arctic Engineering, 2012, Rio de Janeiro. Proceedings of the 31st International Conference on Ocean, Offshore and Arctic Engineering*, 2012.
23. **Franzini, G.R.**; Gonçalves, R.T.; Meneghini, J.R.; Fajarra, A.L.C. “Experimental Forces Measurements on the Flow Around a Fixed and Yawed Cylinder in the Presence of Free Surface”. In: *The 23rd International Ocean and Polar Engineering Conference, 2012, Rhodos. Proceedings of the 23rd International Ocean and Polar Engineering Conference*, 2012.
24. Rateiro, F.; Pesce, C.P.; Gonçalves, R.T.; **Franzini, G.R.**; Fajarra, A.L.C.; Salles, R.; Mendes, P. “Risers Model Tests: Scaling Methodology and Dynamic Similarity”. In: *The 22nd International Ocean and Polar Engineering Conference, 2012, Rhodos. Proceedings of the 23rd International Ocean and Polar Engineering Conference*, 2012.
25. **Franzini, G.R.**; Gonçalves, R.T.; Meneghini, J.R.; Fajarra, A.L.C. “Comparison Between Force Measurements of One and Two Degrees-of-Freedom VIV on Cylinder With Small and Large Mass Ratio”. In: *10th International Conference on Flow-Induced Vibration (& Noise) - FIV 2012, 2012, Dublin. Proceedings of the 10th International Conference on Flow-Induced Vibration (& Noise) - FIV 2012*, 2012.
26. **Franzini, G.R.**; Gonçalves, R.T.; Meneghini, J. R.; Fajarra, A.L.C. “Experimental Investigation Into Vortex-Induced Vibrations of Yawed Cylinders With One and Two Degrees-of-Freedom”. In: *10th International Conference on Flow-Induced Vibration (& Noise) - FIV 2012, 2012, Dublin. Proceedings of the 10th International Conference on Flow-Induced Vibration (& Noise) - FIV 2012*

2012.

27. Gioria, R.S.; Meneghini, J. R.; **Franzini, G.R.**; Fajarra, A.L.C. “Numerical Investigation of the Flow Around a Fixed and Yawed Circular Cylinder With Asymmetrical Boundary Conditions in the Span”. In: *VII Escola de Primavera de Transição e Turbulência, 2012, São Paulo. Anais da VII Escola de Primavera de Transição e Turbulência*, 2012.
28. **Franzini, G.R.**; Pesce, C.P.; Gonçalves, R.T.; Fajarra, A.L.C.; Pereira, A.A.P. “Concomitant Vortex Induced Vibration Experiments: a Cantilevered Flexible Cylinder and a Rigid Cylinder Mounted on a Leaf-spring Apparatus”. In: *XIV International Symposium on Dynamic Problems of Mechanics, 2011, São Sebastião. Proceedings of the XIV International Symposium on Dynamic Problems of Mechanics (DINAME 2011)*, 2011.
29. Gonçalves, R.T.; Freire, C.M.; Rosetti, G.F.; **Franzini, G.R.**; Fajarra, A.L.C.; Meneghini, J. R. “Experimental Comparisons to Assure the Similarity Between VIM (Vortex-Induced Motion) and VIV (Vortex-Induced Vibration) Phenomena”. In: *30th International Conference on Ocean, Offshore and Arctic Engineering, 2011, Rotterdam. Proceedings of the 30th International Conference on Ocean, Offshore and Arctic Engineering*, 2011.
30. **Franzini, G.R.**; Pesce, C.P.; Takafuji, F.C.M.; Gonçalves, R.T.; Tanaka, R.L. ; SILVA, M.R. ; Barbosa, T.F. ; Godinho, C. A. “Crushing of Flexible Pipes Under Traction: A Theoretical-Experimental Assessment”. In: *30th International Conference on Ocean, Offshore and Arctic Engineering, 2011, Rotterdam. Proceedings of the 30th International Conference on Ocean, Offshore and Arctic Engineering*, 2011.
31. Gonçalves, R.T.; **Franzini, G.R.**; Rosetti, G.F.; Fajarra, A.L.C.; Nishimoto, K. “Analysis Methodology of Vortex-Induced Motions (VIM) on a Monocolumn Platform Applying The Hilbert-Huang Transform Method”. In: *OMAE 2010, 2010, Shanghai. Proceeding of the ASME 2010 29th International Conference on Ocean, Offshore and Arctic Engineering*, 2010.
32. Gonçalves, R.T.; Rosetti, G.F.; **Franzini, G.R.**; Fajarra, A.L.C.; Nishimoto, K. “Case study of Vortex-Induced Motions (VIM) on a Monocolumn Platform Applying the Hilbert-Huang Transform Method”. In: *ISOPE 2010, 2010, Beijing. Proceedings of the 20th International Offshore (Ocean) and Polar Engineering Conference & Exhibition*, 2010.
33. Pesce, C.P.; Martins, C.A.; Gay Neto, A.; Fajarra, A.L.C.; Takafuji, F.C.M.; **Franzini, G.R.** ; Barbosa, T.F.; Godinho, C.A. “Crushing and Wet Collapse of Flowline Carcasses: a theoretical-experimental comparison”. In: *29th International Conference on Offshore Mechanics and Arctic Engineering, 2010, 2010, Shanghai. Proceedings of OMAE2010*, 2010.
34. **Franzini, G.R.**; Fajarra, A.L.C.; Pesce, C.P. “Numerical Studies of a flexible structure subjected to Vortex-Induced Vibrations”. In: *Congresso Brasileiro de Engenharia Mecânica, 2009, Gramado. COBEM2009*, 2009.
35. **Franzini, G.R.**; Pereira, A.A.P.; Fajarra, A.L.C.; Pesce, C.P. “Experiments on VIV under frequency modulation and at constant Reynolds numbers”. In: *26th International Conference on Offshore Mechanics and Arctic Engineering, 2008, Estoril. Proceedings of OMAE 08*, 2008.
36. Fajarra, A.L.C.; Meneghini, J.R.; Franciss, R.; **Franzini, G.R.**; Korkischko, I. “Experimental Investigation of Vortex-Induced Vibration on an Inclined Circular Cylinder”. In: *26th International Conference on Offshore Mechanics and Arctic Engineering, 2007, San Diego. Proceedings of OMAE 2007*, 2007.

Proceedings of Conferences (abstracts or extended abstracts)

1. **Franzini, G.R.**; Dias, T. ; Mazzilli, C.E.N. ; Pesce, C.P. . “Parametric excitation of an offshore riser using reduced-order models based on Bessel-type modes: Assessment on hydrodynamic coefficients effects”. *In: 6th International Conference on Nonlinear Science and Complexity, 2016, São José dos Campos. Proceedings of the 6th International Conference on Nonlinear Science and Complexity, 2016.*
2. Casetta, L.; **Franzini, G.R.** ; Pesce, C.P. “The impact of a fractionally (viscoelastic) damped system onto the water free surface”. *In: International Workshop on Water Waves Floating Bodies, 2013, Marseille. Proceedings of the International Workshop on Water Waves Floating Bodies, 2013.*
3. Gioria, R.S.; **Franzini, G.R.** ; Meneghini, J.R. ; Fajarra, A.L.C. “Flow around an inclined cylinder with different end plates boundary conditions”. *In: The 65th Annual Meeting of the American Physical Society’s Division of Fluid Dynamics (DFD), 2012, San Diego. Proceedings of the 65th Annual Meeting of the American Physical Society’s Division of Fluid Dynamics (DFD), 2012.*
4. **Franzini, G.R.**; Gioria, R.S. ; Korkischko, I. ; Meneghini, J.R. ; Fajarra, A.L.C. “Experiments on the Flow Around Yawed and Fixed Cylinder: Forces and Flow Measurements”. *In: The 65th Annual Meeting of the American Physical Society’s Division of Fluid Dynamics (DFD), 2012, San Diego. Proceedings of the 65th Annual Meeting of the American Physical Society’s Division of Fluid Dynamics (DFD), 2012.*
5. Gonçalves, R.T.; **Franzini, G.R.** ; Pesce, C.P. ; Fajarra, A.L.C. ; Mendes, P. “VIV Experiments With a Semi-Immersed Vertical Flexible Cylinder Driven by Top Motion”. *In: The 65th Annual Meeting of the American Physical Society’s Division of Fluid Dynamics (DFD), 2012, San Diego. Proceedings of the 65th Annual Meeting of the American Physical Society’s Division of Fluid Dynamics (DFD), 2012.*
6. **Franzini, G.R.**; Rateiro, F.; Gonçalves, R.T. ; Salles, R. ; Pesce, C. P. ; Mazzilli, C.E.N. “An Experimental Assessment of Rigidity Parameter of a Small-Scaled Riser Model”. *In: Twelfth Pan American Congress of Applied Mechanics, 2012, Port of Spain. Proceedings of the Twelfth Pan American Congress of Applied Mechanics, 2012.*
7. **Franzini, G.R.**; Pesce, C. P.; Gonçalves, R.T. ; Fajarra, A.L.C. ; Pereira, A.A.P. “Analysis of multimodal Vortex-Induced Vibrations using Hilbert-Huang Spectral Analysis”. *In: The 3rd International Conference on Hilbert-Huang Transformation: Theory and Applications, 2011, Qingdao. Proceeding of the 3rd International Conference on Hilbert-Huang Transformation: Theory and Applications, 2011.*
8. **Franzini, G.R.**; Gonçalves, R.T.; Fajarra, A.L.C.; Meneghini, J.R.; Franciss, R. “Experiments of VIV on Rigid and Inclined Cylinders Mounted on a Base with Two Degrees-of-Freedom”. *In: Bluff Bodies Wakes and Vortex-Induced Vibrations Conference, 2010, Capri Island. BBVIV-6, 2010.*
9. **Franzini, G.R.**; Pesce, C. P.; Gonçalves, R.T.; Fajarra, A.L.C.; Meneghini, J.R. “An Experimental Investigation on Frequency Modulated VIV in a Water Channel”. *In: Bluff Bodies Wakes and Vortex-Induced Vibrations Conference, 2010, Capri Island. BBVIV-6, 2010.*
10. **Franzini, G.R.**; Meneghini; J.R.; Fajarra, A.L.C.; Franciss, R. “Two Degrees-of-Freedom Vortex-Induced Vibrations in Cylinders with low Aspect Ratio”. *In: Bluff Bodies Wakes and Vortex-Induced Vibrations Conference, 2010, Capri Island. BBVIV-6, 2010.*
11. **Franzini, G.R.**; Fajarra, A.L.C.; Meneghini, J. R.; Franciss, R. “Experimental Investigation of Vortex-Induced Vibration on rigid, smooth and inclined cylinders”. *In: 5th Conference on Bluff Body Wakes and Vortex-Induced Vibrations, 2007, Costa do Sauípe. BBVIV-5, 2007.*

Students

- Undergraduate students
 - 2017 - present: **Giovanni Aiosa do Amaral**. *Determination of the stiffness matrix of a floating wind turbine using the Finite Element Method*. Financial support from Office Naval Research (ONR);
 - 2017 - present: **Giovanna Ribeiro Campedelli**. *Numerical studies on passive suppression of parametric instability using non-linear energy sinks*. Financial support from São Paulo Research Foundation (FAPESP).
 - 2017: **Daniela Miwa Uemura Kawaguti**. *Reduced-order models for the dynamics of wind turbine blades*. Financial support from Office Naval Research (ONR).
 - 2016 - 2017: **Rafael Koji Nagano**. *Bidimensional numerical simulations of the flow around geometries aiming at dynamic instability of bridges*. Financial support from São Paulo Research Foundation (FAPESP).
 - 2016 - 2017: **Beatriz Sayuri Sato**. *Numerical study of a passive suppressor for Vortex-Induced Vibrations using phenomenological models*. Financial support from São Paulo Research Foundation (FAPESP).
 - 2016 - 2017: **Giovanna Ribeiro Campedelli**. *Investigations on the random parametric excitation phenomenon and applications on a slender and immersed rod*. Financial support from the Brazilian Council for Research (CNPq).
 - 2016 - 2017: **Flávia Donatiello**. *Numerical analysis of the dynamics of a wind turbine tower*. Financial support from Office Naval Research (ONR).
 - 2016 - 2017: **Bianca Teixeira**. *Analysis of a TMD passive suppressor for bridges*. Financial support from São Paulo Research Foundation (FAPESP).
 - 2016: **Alice Lepique Juliano**. *Reduced-order models for the dynamics of a wind turbine blade*. Financial support from Office Naval Research (ONR).
 - 2015 - 2016: **Elvis de Andrade Oliveira**. *Numerical analysis of a passive suppressor for the vibration of a Horizontal Wind Turbine tower*. Financial support from São Paulo Research Foundation (FAPESP).
 - 2015 - 2016: **Carolina Deprá Mondadori**. *Experimental analysis of the crushing of tubes*.
 - 2015 - 2016: **Rebeca Caramêz Saraiva dos Santos**. *Energy harvesting from galloping and flutter*. Financial support from University of São Paulo.
 - 2015: **Arthur Shiniti Cato**. *Numerical investigations into the effects of temporal variations of free-stream velocities and stiffness on Vortex-Induced Vibration phenomenon*. Financial support from São Paulo Research Foundation (FAPESP);
 - 2015: **Amanda Victor Vernabel**. *Design of an apparatus for energy harvesting from fluid-structure interaction phenomena*. Financial support from São Paulo Research Foundation (FAPESP);
 - 2015: **Alexandre Ravagnani**. *Investigation of the energy harvesting efficiency through phenomenological models*. Financial support from São Paulo Research Foundation (FAPESP);
 - 2015: **Lucas Oliveira Bunzel**. *Numerical investigation of energy harvesting from vortex-induced vibrations using piezoelectricity*. Financial support from São Paulo Research Foundation (FAPESP);
 - 2014 - 2015: **Giovanni Aiosa do Amaral**. *Numerical tool for modal analysis of structures*.

Financial support from São Paulo Research Foundation (FAPESP);

- 2014 - 2015: **Bruno Maria Calidonna**. *Parametric excitation of vertical risers using the Finite Element Method*. Financial support from CNPq.
- Msc. Students
 - 2016-present: **Heloísa de Castro Beraldo**. *Reduced-order models for the dynamics of wind turbine towers*. Financial support from CAPES.
 - 2017-present: **Tatiana Ueno**. *Numerical analysis of a non-linear energy sink for vortex-induced vibrations problems*. Financial support from São Paulo Research Foundation (FAPESP).
 - 2017-present: **Igor Lourenço**. *Numerical investigation on the parametric excitation of an immersed cylinder*.
 - 2017-present: **Daniela Miwa Uemura Kawaguti**. *Numerical simulations of the flow around a group of cylinders*. Financial support from Office Naval Research (ONR).
- PhD. Student
 - 2017-present: **Guilherme Jorge Vernizzi Lopes**. *Analytical-numerical analysis of parametric excitation and vortex-induced vibrations problems in vertical and catenary configurations using non-linear reduced-order models*. Financial support from São Paulo Research Foundation (FAPESP).

Teaching

- Undergraduate classes
 - February-June 2014: PEF 2202: Introduction to Solids Mechanics;
 - February-June 2014: PEF 2301: Strength of Materials and statics of structures;
 - August-December 2014/2015: PEF 2302: Mechanics of Structures I;
 - February-June 2015/2016: PEF 2401: Mechanics of Structures II;
 - February-June 2015: PEF 3208: Fundamentals of Mechanics of Structures;
 - August-December 2016: PEF 3202: Mechanics of Structures I;
 - February 2017 - present: PEF 3401: Mechanics of Structures II;
- Graduate classes
 - September-December 2014-2017: PEF 5737: Nonlinear dynamics and stability.
 - June-September 2017: PEF 6000: Special topics on dynamics of structures.

Service

- Reviewer
 - Journal of Fluids and Structures
 - Journal of Vibration and Control
 - Journal of Offshore Mechanics and Arctic Engineering
 - Earthquake Engineering and Earthquake Vibration
 - Ocean Engineering

- Journal of the Brazilian Society of Mechanical Sciences and Engineering
- Applied Ocean Research
- Journal of Sound and Vibration
- Nonlinear Dynamics

Links

- Google scholar;
- Researchgate;