



FIV2024

IGUAÇU FALLS, BRAZIL

CONFERENCE PROGRAM

TUE - 2 JUL	WED - 3 JUL	THU - 4 JUL	FRI - 5 JUL
08:00 Registration			
09:00 Opening ceremony Room Vivace 1	09:00 Welcome Room Vivace 1	09:00 Welcome Room Vivace 1	07:45 Meet at hotel lobby. Buses depart at 8:00.
09:35 Address in memory of Prof David Weaver Keynote lecture Prof Michael Paidoussis <i>"The dynamics of cantilevered structures in axial flow"</i>	09:25 Address in memory of Prof Michel Pettigrew Keynote lecture Prof Bharath Ganapathisubramani <i>"Vortex-dominated flows: Can't live with them, Can't live without them."</i>	09:10 Address in memory of Prof Samir Ziada Keynote lecture Prof André Cavalieri <i>"On the role of coherent turbulent structures in noise and vibration."</i>	08:30 Guided tour around Itaipu Hydroelectric Plant Minimum age is 14 years old. Bring official document with photo. Bags and backpacks are not allowed. Closed footwear attached to the heel is required. Cigarettes, vapes, lighters and sharp objects are prohibited.
10:45 Coffee break	10:35 Coffee break	10:20 Coffee break	
11:10 Parallel sessions A.1 - Room Vivace 1 B.1 - Room Vivace 2 C.1 - Room Allegro 2	11:00 Parallel sessions A.4 - Room Vivace 1 B.4 - Room Vivace 2 C.4 - Room Allegro 2	10:45 Parallel sessions A.7 - Room Vivace 1 B.7 - Room Vivace 2 C.7 - Room Allegro 2	11:30 Return to hotel
12:25 Lunch	12:40 Lunch & <i>Scientific Committee Meeting</i>	12:50 Lunch	12:00 Lunch
14:00 Parallel sessions A.2 - Room Vivace 1 B.2 - Room Vivace 2 C.2 - Room Allegro 2	14:20 Parallel sessions A.5 - Room Vivace 1 B.5 - Room Vivace 2 C.5 - Room Allegro 2		
16:05 Coffee break	16:00 Coffee break	14:15 Meet at hotel lobby. Buses depart at 14:30.	
16:30 Parallel sessions A.3 - Room Vivace 1 B.3 - Room Vivace 2 C.3 - Room Allegro 2	16:25 Parallel sessions A.6 - Room Vivace 1 B.6 - Room Vivace 2 C.6 - Room Allegro 2	15:30 Visit to Iguaçu Falls National Park Free time to walk the trails by the waterfalls.	
		18:00 Meet at <i>Porto Canoas Restaurant</i> for Conference Banquet and Closing Ceremony.	
18:30 Opening Reception by the swimming pools		21:30 Return to Hotel	

PARALLEL SESSIONS

TUESDAY, 2 JULY 2024

A.1 Room Vivace 1

Chairman: *André Fajarra*

11:10 FIV2024 - 0040

Asymptotic location of eigenfrequencies in long one-dimensional FSI systems

V. Vedenev, A. Podoprovetova

11:35 FIV2024 - 0058

A reduced-order model of 3-D extensible pipes conveying fluid: an approach via a modular based strategy

D. O. Tomin, C. P. Pesce, R. M. M. Orsino

12:00 FIV2024 - 0119

Exploring the VIV phenomenon through a coupling between rigid-body and flexible modes

A. L. L. Gontarski, G. R. Franzini, A. L. C. Fajarra, C. P. Pesce

B.1 Room Vivace 2

Chairman: *Sérgio Möller*

11:10 FIV2024 - 0038

Dynamics of a flexible plate mounted behind a cylinder in airflow: Comparison between experiments and wake oscillator model

S. Giri, V. Kartik, A. Agrawal, R. Bhardwaj

11:35 FIV2024 - 0085

Flapping dynamics of an inverted flag behind a cylinder in a uniform flow

U. K. Patel, S. Giri, R. Bhardwaj

12:00 FIV2024 - 0069

Sensitivity analysis of a mathematical reduced-order model for vortex-induced motions of multi-columns floating offshore wind turbines

E. L. de Oliveira, C.P. Pesce, G. A. Amaral, H. Suzuki, R. T. Gonçalves

C.1 Room Allegro 2

Chairman: *Pierre Mossou*

11:10 FIV2024 - 0090

Flow-induced vibration caused by an unbalanced impeller on a centrifugal pump

S. D. Jeldres, D. E. Casagrande, L. E. Ortiz-Vidal

11:35 FIV2024 - 0053

Mitigation of flange leakage due to thermal bowing and shock in a flare header using FSI methodology

P. Diwakar

12:00 FIV2024 - 0045

Resonant blade vibrations caused by low-engine-order flowfield defects in jet engines and gas turbines

F. Abdukhakimov, V. Filippenko, A. Glukhovskiy, O. Voronin, S. Chepiga, M. Erokhin, P. Makarov, M. Kolotnikov, V. Vedenev

A.2 Room Vivace 1

Chairman: *Celso Pesce*

14:00 FIV2024 - 0054

Analysis of the three-dimensional motion of flexible cylinders under vortex-induced vibrations using invariant manifolds

G. J. Vernizzi, S. Lenci, G. R. Franzini

14:25 FIV2024 - 0062

Piezoelectric energy harvesting from VIV on cantilevered flexible cylinders with orthotropic bending stiffness: experimental investigation of varying flow effects

L. S. Madi, G. J. Vernizzi, W. A. Defensor Filho, A. M. Kogishi, C. P. Pesce

14:50 FIV2024 - 0105

Methods comparison for assessing subsea Xmas tree structural integrity regarding flow induced vibration phenomenon

M. Constança, J. Pontes, N. Manglavacchi

15:15 FIV2024 - 0015

Parsimonious identification in the frequency-domain of experimental fluidelastic forces using a generic fractional delay-derivative model

J. Antunes, P. Piteau, X. Delaune, R. Lagrange, D. Panunzio

15:40 FIV2024 - 0063

Study on the fretting wear behavior of helical tube under turbulent excitation

H. Qian, F. Zhipeng, C. Fengchen

B.2 Room Vivace 2

Chairman: *Bharath Ganapathisubramani*

14:00 FIV2024 - 0048

Numerical investigation of flow behavior around two tandem fixed cylinders with varied spacing ratios

P. B. Habowski, A. P. Petry, S. V. Möller, A. Mohany

14:25 FIV2024 - 0049

Experimental study of two tandem oscillating cylinders subjected to a turbulent crossflow

P. B. Habowski, A. P. Petry, S. V. Möller, A. Mohany

14:50 FIV2024 - 0047

Predicting fluid-elastic instability of tube bundle based on data driven and theoretical modeling

F. Zhipeng

15:15 FIV2024 - 0122

Vortex shedding and flow periodicities in a non-uniform geometry tube array

P. Mehrabian, N. Mureithi

15:40 FIV2024 - 0123

Coherent structures and flow periodicities in a non-uniform tube array

P. Mehrabian, N. Mureithi

C.2 Room Allegro 2

Chairman: *Luis E. Ortiz-Vidal*

14:00 FIV2024 - 0009

Root cause analysis of flow and noise-induced-vibration in large vessels

P. Diwakar, M. Jaouhari

14:25 FIV2024 - 0018

Acoustic characterization of a test loop

M. Kocher, P. Moussou, A. Joly, P. Piteau, R. Lagrange, D. Panunzio

14:50 FIV2024 - 0028

A simple approach for mitigating aerodynamic noise in high-speed train pantographs

M. Suzuki, N. Okura, T. Murao

15:15 FIV2024 - 0111

Investigation of a fuel bundle response to acoustic excitation

T. Sawadogo, B. Smith

15:40 FIV2024 - 0089

Unsteady flow and its susceptibility to induce noise in various arrangements of cylinders in cross-flow

M. Alziadeh, A. Mohany

A.3 Room Vivace 1

Chairman: *Guilherme Vernizzi*

16:30 FIV2024 - 0039

Damping effects on flow-induced rotational vibrations of a rigid cylinder-plate

A. K. Pandey, R. Bhardwaj

16:55 FIV2024 - 0042

Influence of structural damping in the rotational response of rounded rectangles under fluid-structure instabilities

V. H. S. Peron, B. S. Carmo

17:20 FIV2024 - 0064

Added damping for the vibrational response of horizontal pipes in multiphase flow conditions

S.P.C. Belfroid, R. Bazuin, H. Pereboom, B. Luttik, N. Gonzalez-Diez

17:45 FIV2024 - 0130

Damping estimation for a hybrid U-bend tube array in two-phase flow

S. Darvish, N. Mureithi, A. Hadji, M. Cho

B.3 Room Vivace 2

Chairman: *Mohammed Alziadeh*

16:30 FIV2024 - 0004

Analysis of cylinder force spectrum dependency to flow pattern, in a rotated triangular tube bundle subjected to air-water cross-flow

W. Benguigui, F. Beltran

16:55 FIV2024 - 0027

An experimental study about the random excitation force characteristics of low void fraction gas-liquid two-phase flow acting on tube bundle

S. Nishida, Y. Komuro, H. Sugiyura

17:20 FIV2024 - 0097

Exploring fluid-structure interaction in horizontal pipes transporting two-phase intermittent flow: an experimental investigation

D. A. Neves, S. C. Vieira, J. R. Cenzi, M. S. Castro, A. T. Fabro

17:45 FIV2024 - 0052

Numerical analysis of flow interactions within a bank of tubes with close space ratio

R. F. Neumeister, C. Reichel, A. P. Petry, S. V. Möller

C.3 Room Allegro 2

Chairman: *Renato Picelli*

16:30 FIV2024 - 0128

Drag forces reductions in wake flow with flexible foils

J. D'Adamo, R. Godoy-Diana

16:55 FIV2024 - 0010

Passive mitigation and energy harvesting from flutter with rotary nonlinear energy sink

G. P. Araujo, J. A. I. da Silva, F. D. Marques

17:20 FIV2024 - 0114

Flight test campaign of a specific military helicopter with an external accessory to investigate abnormal vibrations on the horizontal empennage

D. R. Ambrosio, E. A. Camargo, V. C. Sousa, D. F. C. Zúñiga, M. Sartorato, E. L. Oliveira

17:45 FIV2024 - 0113

Investigation about the impact of harmonic and random vibrations on the weather radar of rotary wing aircraft

D. R. Ambrosio, E. A. Camargo, D. F. C. Zúñiga, M. Sartorato, V. C. Sousa, E. L. Oliveira

PARALLEL SESSIONS

WEDNESDAY, 3 JULY 2024

<p>A.4 Room Vivace 1</p> <p>Chairman: Wagner Defensor Filho</p> <p>11:00 FIV2024 - 0036</p> <p>A study of structural topology optimization applied to Fluid-Induced Vibration (FIV) problems</p> <p><i>L. O. Siqueira, K. E. S. Silva, E. C. N. Silva, R. Picelli</i></p> <p>11:25 FIV2024 - 0044</p> <p>1-DoF Vortex-Induced Vibrations investigation of a circular cylinder at supercritical Reynolds regime</p> <p><i>M. de Oliveira, B. S. Carmo, J. R. Meneghini</i></p> <p>11:50 FIV2024 - 0096</p> <p>The effect of porosity on the Flow-Induced Vibration of a flat plate</p> <p><i>M. M. Cicolin, D. W. Carlson, B. Ganapathisubramani</i></p> <p>12:15 FIV2024 - 0121</p> <p>Effects of mass ratio and restoring condition on the flow-induced vibration of floating cylinders with low aspect ratio</p> <p><i>A. L. L. Gontarski, I. R. F. Gomes, M. M. Medeiros, R. T. Gonçalves, R. T. Gonçalves, A. L. C. Fujara</i></p>	<p>B.4 Room Vivace 2</p> <p>Chairman: Njuki Mureithi</p> <p>11:00 FIV2024 - 0003</p> <p>Numerical and Experimental study to characterize two-phase flow-induced vibration of a single cylinder in a confined channel</p> <p><i>F. Beltran, W. Benguigui</i></p> <p>11:25 FIV2024 - 0007</p> <p>Exploring Two-Phase Cross-flow Using A Wire Mesh Sensor</p> <p><i>A. Chahine, G. Brilliant, D. Vivaldi, G. Spina</i></p> <p>11:50 FIV2024 - 0026</p> <p>Digital image processing of an oil spill in a circulation channel for comparison with CFD simulations</p> <p><i>H. C. S. Júnior, R. Sbragio, M. R. Martins</i></p> <p>12:15 FIV2024 - 0139</p> <p>Experimental study of two-phase flow-induced vibrations in a horizontal pipe with an internal restriction</p> <p><i>L. F.A. Alegria, L. E. Ortiz-Vidal, O. M.H. Rodriguez</i></p>	<p>C.4 Room Allegro 2</p> <p>Chairman: André Cavalleri</p> <p>11:00 FIV2024 - 0011</p> <p>Investigation of the aeroelastic behavior of the blades of an offshore wind turbine using high-fidelity numerical simulations</p> <p><i>B. S. Carmo, G. Vijayakumar, M. A. Sprague</i></p> <p>11:25 FIV2024 - 0059</p> <p>An evaluation of the accuracy of the actuator line method for unsteady aerodynamics</p> <p><i>E. Alva N., V. G. Kleine, A. V. G. Cavalleri</i></p> <p>11:50 FIV2024 - 0133</p> <p>Three-dimensional transition of low-Reynolds-number flows past plunging airfoil and wing</p> <p><i>A. Gao, C. Cantwell, O. Son, S. Sherwin</i></p> <p>12:15 FIV2024 - 0120</p> <p>Turbulence modeling application over the Imperial Front Wing standard case</p> <p><i>F. F. Buscarolo, J. C. L. Alves, S. J. Sherwin, G. R. S. Assi</i></p>
<p>A.5 Room Vivace 1</p> <p>Chairman: José Antunes</p> <p>14:20 FIV2024 - 0141</p> <p>Resonant modes of open cavities which are small relative to the incoming boundary layer</p> <p><i>F. O. Aguirre, V. B. Victorino, M. S. Mathias, M. A. F. Medeiros</i></p> <p>14:45 FIV2024 - 0092</p> <p>Coupling the structural solver Giraffe and the fluid dynamics solver OpenFOAM with preCICE</p> <p><i>R. Puraca, B. S. Carmo, A. G. Neto</i></p> <p>15:10 FIV2024 - 0110</p> <p>Computation of fluid and rigid body interaction using a new immersed finite element method</p> <p><i>F. G. Junior, N. Mangiavacchi, S. McGinty, G. R. Anjos</i></p> <p>15:35 FIV2024 - 0076</p> <p>An effective computational approach for modelling flows in FSI problems</p> <p><i>S. Yu</i></p>	<p>B.5 Room Vivace 2</p> <p>Chairman: Stefan Belfroid</p> <p>14:20 FIV2024 - 0022</p> <p>Towards optimization of an anisotropic pressure fluctuation model for the simulation of turbulence-induced vibrations of fuel rods</p> <p><i>K. Zwijsen, A. M de Freitas, S. Tajfirooz, E. M. A. Frederix, F. Roelofs, A. H. van Zuijlen</i></p> <p>14:45 FIV2024 - 0084</p> <p>Numerical study of axial-flow-induced vibration for nuclear applications.</p> <p><i>J. Salachna</i></p> <p>15:10 FIV2024 - 0140</p> <p>Simulation of nuclear fuel rod vibration and analysis of grid-to-rod wear fretting risk</p> <p><i>D. T. Spinel, J. Pacull, M. Quenehen, H. Hadzić, B. Painter, H. Marr, E. Rigaud</i></p> <p>15:35 FIV2024 - 0132</p> <p>Toward a GPU-accelerated Fluid-Structure Interaction framework for high-fidelity simulations of Flow-Induced Vibrations in nuclear reactors</p> <p><i>S. Bistany, D. Reger, T. Nguyen, E. Merzari, J. Solberg</i></p>	<p>C.5 Room Allegro 2</p> <p>Chairman: Murilo Cicolin</p> <p>14:20 FIV2024 - 0071</p> <p>Aerodynamics and three-dimensional elastic deformation of a flapping wing with insect-inspired rigidity distribution</p> <p><i>C. García-Baena, C. Gutiérrez-Montes, J. I. Jiménez-González, R. Antier, B. Thiria, R. Godoy-Diana</i></p> <p>14:45 FIV2024 - 0017</p> <p>Improving propulsive efficiency using bio-inspired intermittent locomotion</p> <p><i>B. Thiria, T. Aurégan, S. Courech du Pont</i></p> <p>15:10 FIV2024 - 0088</p> <p>A fluid-structure interaction model for soft robots for percutaneous interventions</p> <p><i>M. Kheiri, A. Hooshlar</i></p> <p>15:35 FIV2024 - 0112</p> <p>Experimental study of perturbation growth mechanisms in a laminar jet flow</p> <p><i>L. Gareev, O. Ivanov, V. Trifonov, V. Vedeneev</i></p>
<p>A.6 Room Vivace 1</p> <p>Chairman: Icaro Carvalho</p> <p>16:25 FIV2024 - 0008</p> <p>Fluid-Structure-Surface Interactions of Rigid Flat Plate Near a Free Surface</p> <p><i>H. Samsam-Khayani, B. Seyed-Aghazadeh</i></p> <p>16:50 FIV2024 - 0081</p> <p>Modification of vortex-induced vibrations of an elastic cylinder near rigid plates</p> <p><i>O. Ivanov, Y. Demchenko</i></p> <p>17:15 FIV2024 - 0091</p> <p>Numerical simulation of flow-induced vibration of a cylinder near a finite-length plate</p> <p><i>A. Shishaveva, O. Ivanov</i></p> <p>17:40 FIV2024 - 0002</p> <p>A review of wall-proximity effects on flow-induced vibrations</p> <p><i>M. M. Alam</i></p>	<p>B.6 Room Vivace 2</p> <p>Chairman: Bruno Carmo</p> <p>16:25 FIV2024 - 0014</p> <p>Urans simulations of Vortex-Induced Vibrations of cylinders in cross-flow</p> <p><i>K. Zwijsen, M. M. M. D. Hussain, F. Roelofs</i></p> <p>16:50 FIV2024 - 0072</p> <p>Fluid-structure interaction analysis of a layered pipeline in a fluid catalytic cracking unit</p> <p><i>F. A. P. Morales, J. M. Vedovotto, A. A. C. Júnior, A. S. Neto, R. Serfaty</i></p> <p>17:15 FIV2024 - 0126</p> <p>Bending-axial-torsional dynamics of pipes conveying fluid</p> <p><i>V. S. F. Maciel, G. Vernizzi, M. Kheiri, G. R. Franzini</i></p> <p>17:40 FIV2024 - 0131</p> <p>Dynamics of a fluid-conveying pipe under the effect of Vortex-Induced Vibration</p> <p><i>L. L. H. Valdivia, J. P. J. Avila, R. P. Sanches</i></p>	<p>C.6 Room Allegro 2</p> <p>Chairman: Philip Diwakar</p> <p>16:25 FIV2024 - 0056</p> <p>Investigation of flow instabilities leading to non-synchronous vibration of compressor blades</p> <p><i>P. Šidlof, V. Vomáčko, M. Štěpán, D. Šimurda, M. Mamula, J. Lepicovsky</i></p> <p>16:50 FIV2024 - 0118</p> <p>Effect of flow-induced excitation characteristics on the fretting wear behavior of steam generator tubes</p> <p><i>S. El Bouzidi, A. McLellan, B. St. Pierre, F. Guérout, M. Alziadeh</i></p> <p>17:15 FIV2024 - 0094</p> <p>Experimental and numerical study of heat transfer in a counterflow heat exchanger with diffuser channels</p> <p><i>V. Trifonov, A. Reshmin, V. Lushchik, S. Teplovodskii</i></p> <p>17:40 FIV2024 - 0080</p> <p>The effect of nonlinearity on the dynamics of structures</p> <p><i>H. Goyder</i></p>

PARALLEL SESSIONS

THURSDAY, 4 JULY 2024

A.7 Room Vivace 1	B.7 Room Vivace 2	C.7 Room Allegro 2
<i>Chairman: Stefan Belfroid</i>	<i>Chairman: Michael Paidoussis</i>	<i>Chairman: Spencer Sherwin</i>
10:45 FIV2024 - 0055 Drag control in the backward-facing step problem using parametric optimization <i>L. O. Siqueira, L. G. B. Vieira, J. P. R. Júnior, E. C. N. Silva, J. R. Meneghini, G. R. S. Assi, R. Picelli</i>	10:45 FIV2024 - 0031 CFD investigation of the turbulent pressure spectra and correlation lengths inside a coaxial cylinders channel <i>P. Moussou, M. Kocher</i>	10:45 FIV2024 - 0019 Wave-Assisted Flapping Foil Propulsion - Flow Physics and Scaling Laws from FSI Simulations <i>H. Raut, J. Seo, R. Mittal</i>
11:10 FIV2024 - 0075 Active control of flow past a square cylinder using synthetic jet array <i>V. Mittal, V. Arumuru</i>	11:10 FIV2024 - 0046 A coupled two-way fluid-structure interaction model for a hanging cantilevered tubular pipe aspirating fluid <i>F. Daneshmand, T. Liaghat, M. P. Paidoussis</i>	11:10 FIV2024 - 0104 Resolvent analysis for aerofoil response to optimal gusts <i>H. Mak, O. Marquet, L. Lesshafft</i>
11:35 FIV2024 - 0012 Evaluation of a system comprised of a circular cylinder fitted with eight wake-control rods at different angles of attack <i>I. A. Carvalho, G. R. S. Assi</i>	11:35 FIV2024 - 0050 Vibration of a pipe with rotationally restrained ends conveying two-phase flow <i>X. Wang, B. Wang, H. Jiao, B. Sun, G. Fu, J. Su</i>	11:35 FIV2024 - 0093 Description of the fluid-structure interaction problem for flutter of a rectangular plate by using the constrained formulation <i>K. Hara</i>
12:00 FIV2024 - 0005 Experimental investigation at moderate Reynolds numbers on the omnidirectional effectiveness of eight control rods as suppressors of vortex-induced vibration <i>P. H. N. Silva, G. R. S. Assi</i>	12:00 FIV2024 - 0101 Submerged cantilevered flexible pipe discharging flow in post-critical dynamic regime: an experimental-numerical assessment <i>W. A. Defensor Filho, R. M. M. Orsino, G. J. Vernizzi, G. R. Franzini, C. P. Pesce</i>	12:00 FIV2024 - 0100 Numerical investigation of the nonclassical transition to divergence in a three-dimensional non-rotating and rotating wing <i>A. Chicherina, V. Vedenev</i>
12:25 FIV2024 - 0138 Experimental study of vortex-induced vibration of a circular cylinder surrounded by flow control rods varying draft <i>M. L. L. da Silva, P. H. N. Silva, G. R. S. Assi</i>	12:25 FIV2024 - 0107 Coupled fluid-structure simulations of a cantilever beam in axial water flow <i>D. Vivaldi</i>	12:25 FIV2024 - 0083 Torsional aero-elastic oscillations of a circular cylinder attached to the end of an elastic beam. <i>Y. Demchenko, O. Ivanov, A. Zubkov</i>

CONFERENCE MAP

