

# Franck Nicoud

## List of Publications by Year in descending order

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132  
papers

8,417  
citations

109137

35  
h-index

45213

90  
g-index

139  
all docs

139  
docs citations

139  
times ranked

4271  
citing authors

#	ARTICLE	IF	CITATIONS
1	Subgrid-Scale Stress Modelling Based on the Square of the Velocity Gradient Tensor. <i>Flow, Turbulence and Combustion</i> , 1999, 62, 183-200.	1.4	2,653
2	Large-Eddy Simulation of the Shock/Turbulence Interaction. <i>Journal of Computational Physics</i> , 1999, 152, 517-549.	1.9	598
3	Using singular values to build a subgrid-scale model for large eddy simulations. <i>Physics of Fluids</i> , 2011, 23, .	1.6	443
4	An approach to wall modeling in large-eddy simulations. <i>Physics of Fluids</i> , 2000, 12, 1629-1632.	1.6	410
5	Acoustic Modes in Combustors with Complex Impedances and Multidimensional Active Flames. <i>AIAA Journal</i> , 2007, 45, 426-441.	1.5	308
6	Red cells™ dynamic morphologies govern blood shear thinning under microcirculatory flow conditions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 13289-13294.	3.3	179
7	Thermoacoustic instabilities: Should the Rayleigh criterion be extended to include entropy changes?. <i>Combustion and Flame</i> , 2005, 142, 153-159.	2.8	162
8	Conservative High-Order Finite-Difference Schemes for Low-Mach Number Flows. <i>Journal of Computational Physics</i> , 2000, 158, 71-97.	1.9	154
9	Actual Impedance of Nonreflecting Boundary Conditions: Implications for Computation of Resonators. <i>AIAA Journal</i> , 2004, 42, 958-964.	1.5	144
10	Combining a Helmholtz solver with the flame describing function to assess combustion instability in a premixed swirled combustor. <i>Combustion and Flame</i> , 2013, 160, 1743-1754.	2.8	135
11	Image-based large-eddy simulation in a realistic left heart. <i>Computers and Fluids</i> , 2014, 94, 173-187.	1.3	132
12	Compact finite difference schemes on non-uniform meshes. Application to direct numerical simulations of compressible flows. <i>International Journal for Numerical Methods in Fluids</i> , 1999, 29, 159-191.	0.9	130
13	Large-Eddy Simulation and Acoustic Analysis of a Swirled Staged Turbulent Combustor. <i>AIAA Journal</i> , 2006, 44, 741-750.	1.5	122
14	Mixed acoustic-entropy combustion instabilities in gas turbines. <i>Journal of Fluid Mechanics</i> , 2014, 749, 542-576.	1.4	115
15	Comparison of Direct and Indirect Combustion Noise Mechanisms in a Model Combustor. <i>AIAA Journal</i> , 2009, 47, 2709-2716.	1.5	114
16	Flow forcing techniques for numerical simulation of combustion instabilities. <i>Combustion and Flame</i> , 2002, 131, 371-385.	2.8	112
17	Development and assessment of a coupled strategy for conjugate heat transfer with Large Eddy Simulation: Application to a cooled turbine blade. <i>International Journal of Heat and Fluid Flow</i> , 2009, 30, 1129-1141.	1.1	111
18	Large eddy simulation wall-modeling based on suboptimal control theory and linear stochastic estimation. <i>Physics of Fluids</i> , 2001, 13, 2968-2984.	1.6	102

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19	Joint use of compressible large-eddy simulation and Helmholtz solvers for the analysis of rotating modes in an industrial swirled burner. <i>Combustion and Flame</i> , 2006, 145, 194-205.	2.8	99
20	Flow-Induced Transitions of Red Blood Cell Shapes under Shear. <i>Physical Review Letters</i> , 2018, 121, 118103.	2.9	93
21	An analytical model for azimuthal thermoacoustic modes in an annular chamber fed by an annular plenum. <i>Combustion and Flame</i> , 2014, 161, 1374-1389.	2.8	92
22	About the Zero Mach Number Assumption in the Calculation of Thermoacoustic Instabilities. <i>International Journal of Spray and Combustion Dynamics</i> , 2009, 1, 67-111.	0.4	83
23	Numerical and analytical modelling of entropy noise in a supersonic nozzle with a shock. <i>Journal of Sound and Vibration</i> , 2011, 330, 3944-3958.	2.1	74
24	Biomechanical wall properties of human intracranial aneurysms resected following surgical clipping (IRRAs Project). <i>Journal of Biomechanics</i> , 2011, 44, 2685-2691.	0.9	71
25	Large-eddy simulation of a bi-periodic turbulent flow with effusion. <i>Journal of Fluid Mechanics</i> , 2008, 598, 27-65.	1.4	66
26	A simple analytical model to study and control azimuthal instabilities in annular combustion chambers. <i>Combustion and Flame</i> , 2012, 159, 2374-2387.	2.8	66
27	Adiabatic Homogeneous Model for Flow Around a Multiperforated Plate. <i>AIAA Journal</i> , 2008, 46, 2623-2633.	1.5	60
28	Symmetry breaking of azimuthal thermo-acoustic modes in annular cavities: a theoretical study. <i>Journal of Fluid Mechanics</i> , 2014, 760, 431-465.	1.4	58
29	Image-Based Simulations Show Important Flow Fluctuations in a Normal Left Ventricle: What Could be the Implications?. <i>Annals of Biomedical Engineering</i> , 2016, 44, 3346-3358.	1.3	56
30	Haemodynamic imaging of thoracic stent-grafts by computational fluid dynamics (CFD): presentation of a patient-specific method combining magnetic resonance imaging and numerical simulations. <i>European Radiology</i> , 2012, 22, 2094-2102.	2.3	45
31	Direct simulations for wall modeling of multicomponent reacting compressible turbulent flows. <i>Physics of Fluids</i> , 2009, 21, .	1.6	44
32	An unstructured solver for simulations of deformable particles in flows at arbitrary Reynolds numbers. <i>Journal of Computational Physics</i> , 2014, 256, 465-483.	1.9	40
33	Stability analysis of thermo-acoustic nonlinear eigenproblems in annular combustors. Part II. Uncertainty quantification. <i>Journal of Computational Physics</i> , 2016, 325, 411-421.	1.9	40
34	Integral boundary conditions for unsteady biomedical CFD applications. <i>International Journal for Numerical Methods in Fluids</i> , 2002, 40, 457-465.	0.9	39
35	Defining Wave Amplitude in Characteristic Boundary Conditions. <i>Journal of Computational Physics</i> , 1999, 149, 418-422.	1.9	37
36	Assessing non-normal effects in thermoacoustic systems with mean flow. <i>Physics of Fluids</i> , 2011, 23, .	1.6	36

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37	How should the optical tweezers experiment be used to characterize the red blood cell membrane mechanics?. <i>Biomechanics and Modeling in Mechanobiology</i> , 2017, 16, 1645-1657.	1.4	36
38	A Tool to Study Azimuthal Standing and Spinning Modes in Annular Combustors. <i>International Journal of Aeroacoustics</i> , 2009, 8, 57-67.	0.8	35
39	Accounting for convective effects in zero-Mach-number thermoacoustic models. <i>Journal of Sound and Vibration</i> , 2014, 333, 246-262.	2.1	34
40	Numerical assessment of thermo-acoustic instabilities in gas turbines. <i>International Journal for Numerical Methods in Fluids</i> , 2005, 47, 849-855.	0.9	32
41	Effect of Perforated Plates on the Acoustics of Annular Combustors. <i>AIAA Journal</i> , 2012, 50, 2629-2642.	1.5	32
42	About the numerical robustness of biomedical benchmark cases: Interlaboratory FDA's idealized medical device. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2017, 33, e02789.	1.0	32
43	Fluid-structure interaction of a pulsatile flow with an aortic valve model: A combined experimental and numerical study. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2018, 34, e2945.	1.0	32
44	Numerical and analytical investigation of the indirect combustion noise in a nozzle. <i>Comptes Rendus - Mecanique</i> , 2009, 337, 415-425.	2.1	31
45	Biomechanical Assessment of the Individual Risk of Rupture of Cerebral Aneurysms: A Proof of Concept. <i>Annals of Biomedical Engineering</i> , 2013, 41, 28-40.	1.3	31
46	Theoretical analysis of the mass balance equation through a flame at zero and non-zero Mach numbers. <i>Combustion and Flame</i> , 2015, 162, 60-67.	2.8	31
47	Conjugate heat transfer with Large Eddy Simulation for gas turbine components. <i>Comptes Rendus - Mecanique</i> , 2009, 337, 550-561.	2.1	28
48	Symmetry breaking of azimuthal thermoacoustic modes: the UQ perspective. <i>Journal of Fluid Mechanics</i> , 2016, 789, 534-566.	1.4	28
49	Intraventricular vector flow mapping—a Doppler-based regularized problem with automatic model selection. <i>Physics in Medicine and Biology</i> , 2017, 62, 7131-7147.	1.6	28
50	Assessment of combustion noise in a premixed swirled combustor via Large-Eddy Simulation. <i>Computers and Fluids</i> , 2013, 78, 1-9.	1.3	27
51	Validation of an immersed thick boundary method for simulating fluid-structure interactions of deformable membranes. <i>Journal of Computational Physics</i> , 2016, 322, 723-746.	1.9	27
52	Reconciling PC-MRI and CFD: An in-vitro study. <i>NMR in Biomedicine</i> , 2019, 32, e4063.	1.6	26
53	Assessment of subgrid-scale models with a large-eddy simulation-dedicated experimental database: The pulsatile impinging jet in turbulent cross-flow. <i>Physics of Fluids</i> , 2014, 26, 075108.	1.6	25
54	Introducing the pro-coagulant contact system in the numerical assessment of device-related thrombosis. <i>Biomechanics and Modeling in Mechanobiology</i> , 2018, 17, 815-826.	1.4	24

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55	Assessment of the Indirect Combustion Noise Generated in a Transonic High-Pressure Turbine Stage. <i>Journal of Engineering for Gas Turbines and Power</i> , 2016, 138, .	0.5	23
56	Analysis and Modeling of Entropy Modes in a Realistic Aeronautical Gas Turbine. <i>Journal of Engineering for Gas Turbines and Power</i> , 2013, 135, .	0.5	22
57	Simulation and modelling of the waves transmission and generation in a stator blade row in a combustion-noise framework. <i>Journal of Sound and Vibration</i> , 2014, 333, 6090-6106.	2.1	22
58	Combining analytical models and LES data to determine the transfer function from swirled premixed flames. <i>Combustion and Flame</i> , 2020, 217, 222-236.	2.8	20
59	Kinetics of the coagulation cascade including the contact activation system: sensitivity analysis and model reduction. <i>Biomechanics and Modeling in Mechanobiology</i> , 2019, 18, 1139-1153.	1.4	19
60	Intracranial Aneurysmal Pulsatility as a New Individual Criterion for Rupture Risk Evaluation: Biomechanical and Numeric Approach (IRRAs Project). <i>American Journal of Neuroradiology</i> , 2014, 35, 1765-1771.	1.2	18
61	A consistent finite element approach to large eddy simulation. , 1998, , .		17
62	Accounting for Acoustic Damping in a Helmholtz Solver. <i>AIAA Journal</i> , 2017, 55, 1205-1220.	1.5	17
63	A numerical assessment of wall shear stress changes after endovascular stenting. <i>Journal of Biomechanics</i> , 2005, 38, 2019-2027.	0.9	15
64	Large-Eddy Simulation of the Acoustic Response of a Perforated Plate. , 2008, , .		15
65	Using Boundary Conditions to Account for Mean Flow Effects in a Zero Mach Number Acoustic Solver. <i>Journal of Engineering for Gas Turbines and Power</i> , 2012, 134, .	0.5	15
66	Numerical simulation of deformable particles in a Coulter counter. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2019, 35, e3243.	1.0	15
67	Effect of multiperforated plates on the acoustic modes in combustors. <i>Comptes Rendus - Mecanique</i> , 2009, 337, 406-414.	2.1	14
68	Solution of Thermoacoustic Eigenvalue Problems With a Noniterative Method. <i>Journal of Engineering for Gas Turbines and Power</i> , 2020, 142, .	0.5	14
69	Active control of an unsteady flow over a rectangular cavity. , 1998, , .		13
70	Uncertainty Quantification of Thermoacoustic Instabilities in a Swirled Stabilized Combustor. , 2015, , .		13
71	Impact of the membrane viscosity on the tank-treading behavior of red blood cells. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	13
72	Effects of uniform injection at the wall on the stability of Couette-like flows. <i>Physical Review E</i> , 1997, 56, 3000-3009.	0.8	12

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73	Image-based patient-specific simulation: a computational modelling of the human left heart haemodynamics. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2012, 15, 74-75.	0.9	12
74	Large-Eddy Simulation of Turbulence in Cardiovascular Flows. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2018, , 147-167.	2.0	12
75	A novel modal expansion method for low-order modeling of thermoacoustic instabilities in complex geometries. <i>Combustion and Flame</i> , 2019, 206, 334-348.	2.8	12
76	Waves Transmission and Generation in Turbine Stages in a Combustion-Noise Framework. , 2010, , .		11
77	Computing combustion noise by combining large eddy simulations with analytical models for the propagation of waves through turbine blades. <i>Comptes Rendus - Mecanique</i> , 2013, 341, 131-140.	2.1	11
78	Boundary Conditions for the Computation of Thermoacoustic Modes in Combustion Chambers. <i>AIAA Journal</i> , 2014, 52, 1180-1193.	1.5	11
79	Non Invasive Blood Flow Features Estimation in Cerebral Arteries from Uncertain Medical Data. <i>Annals of Biomedical Engineering</i> , 2017, 45, 2574-2591.	1.3	11
80	Data assimilation for identification of cardiovascular network characteristics. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2017, 33, e2824.	1.0	11
81	Mathematical and computational modeling of device-induced thrombosis. <i>Current Opinion in Biomedical Engineering</i> , 2021, 20, 100349.	1.8	11
82	Heat-release dynamics in a doubly-transcritical LO <sub>2</sub> /LCH <sub>4</sub> cryogenic coaxial jet flame subjected to fuel inflow acoustic modulation. <i>Proceedings of the Combustion Institute</i> , 2021, 38, 6375-6383.	2.4	10
83	A velocity transformation for heat and mass transfer. <i>Physics of Fluids</i> , 2000, 12, 237-238.	1.6	9
84	A low-complexity global optimization algorithm for temperature and pollution control in flames with complex chemistry. <i>International Journal of Computational Fluid Dynamics</i> , 2006, 20, 93-98.	0.5	9
85	A Thickened-Hole Model for Large Eddy Simulations over Multiperforated Liners. <i>Flow, Turbulence and Combustion</i> , 2018, 101, 705-717.	1.4	9
86	Numerical simulation of time-resolved 3D phase-contrast magnetic resonance imaging. <i>PLoS ONE</i> , 2021, 16, e0248816.	1.1	9
87	Stochastic forcing for sub-grid scale models in wall-modeled large-eddy simulation. <i>Physics of Fluids</i> , 2021, 33, .	1.6	9
88	A comparison of solvers for quadratic eigenvalue problems from combustion. <i>International Journal for Numerical Methods in Fluids</i> , 2008, 56, 1481-1487.	0.9	8
89	Prediction of the Nonlinear Dynamics of a Multiple Flame Combustor by Coupling the Describing Function Methodology With a Helmholtz Solver. , 2013, , .		8
90	Representing the geometrical complexity of liners and boundaries in low-order modeling for thermoacoustic instabilities. <i>Journal of Computational Physics</i> , 2021, 428, 110077.	1.9	8

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91	Large-Eddy Simulation of a Turbulent Flow around a Multi-Perforated Plate. , 2007, , 289-303.		8
92	Validation of a Flame Transfer Function Reconstruction Method for Complex Turbulent Configurations. , 2008, , .		7
93	Direct Numerical Simulation of combustion near a carbonaceous surface in a quiescent flow. International Journal of Heat and Mass Transfer, 2015, 84, 130-148.	2.5	7
94	Numerical Assessment of Stability Criteria from Disturbance Energies in Gaseous Combustion. , 2007, , .		6
95	Including Flowâ€™Acoustic Interactions in the Helmholtz Computations of Industrial Combustors. AIAA Journal, 2018, 56, 4815-4829.	1.5	6
96	Physics-constrained intraventricular vector flow mapping by color Doppler. Physics in Medicine and Biology, 2021, 66, 245019.	1.6	6
97	Direct Numerical Simulation Of Turbulent Multispecies Channel Flow With Wall Ablation. , 2007, , .		5
98	On the damped oscillations of an elastic quasi-circular membrane in a two-dimensional incompressible fluid. Journal of Fluid Mechanics, 2014, 746, 300-331.	1.4	5
99	Low order modeling method for assessing the temperature of multi-perforated plates. International Journal of Heat and Mass Transfer, 2018, 127, 727-742.	2.5	5
100	YALES2BIO: A Computational Fluid Dynamics Software Dedicated to the Prediction of Blood Flows in Biomedical Devices. IFMBE Proceedings, 2015, , 7-10.	0.2	5
101	A Pipeline for the Generation of Synthetic Cardiac Color Doppler. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 932-941.	1.7	5
102	Numerical active control of two-dimensional boundary layer separation. , 1996, , .		4
103	Effect of the fluidâ€™structure interaction on solid rocket motors instabilities. European Journal of Computational Mechanics, 2012, 21, 337-350.	0.6	4
104	Using Image-based CFD to Investigate the Intracardiac Turbulence. Modeling, Simulation and Applications, 2015, , 97-117.	1.3	4
105	Direct numerical simulation of a reacting turbulent channel flow with thermochemical ablation. Journal of Turbulence, 2010, 11, N44.	0.5	3
106	Effect of the Fluid Structure Interaction on the Aeroacoustic Instabilities of Solid Rocket Motors. , 2011, , .		3
107	Comparison of Heterogeneous and Homogeneous Coolant Injection Models for Large Eddy Simulation of Multiperforated Liners Present in a Combustion Simulator. , 2017, , .		3
108	Detecting cells rotations for increasing the robustness of cell sizing by impedance measurements, with or without machine learning. Cytometry Part A: the Journal of the International Society for Analytical Cytology, 2021, 99, 977-986.	1.1	3

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109	A Heterogeneous Model of Endovascular Devices for the Treatment of Intracranial Aneurysms. International Journal for Numerical Methods in Biomedical Engineering, 2021, , e3552.	1.0	3
110	Full-volume three-component intraventricular vector flow mapping by triplane color Doppler. Physics in Medicine and Biology, 2022, 67, 095004.	1.6	3
111	Damping Effect of Perforated Plates on the Acoustics of Annular Combustors. , 2009, , .		2
112	Characterisation of a dedicated mechanical model for red blood cells: numerical simulations of optical tweezers experiment. Computer Methods in Biomechanics and Biomedical Engineering, 2014, 17, 28-29.	0.9	2
113	Backward sensitivity analysis and reduced-order covariance estimation in noninvasive parameter identification for cerebral arteries. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3170.	1.0	2
114	Direct Numerical Simulation of Reacting Turbulent Multi-Species Channel Flow. , 2006, , 85-92.		2
115	On the stability and dissipation of wall boundary conditions for compressible flows. International Journal for Numerical Methods in Fluids, 2010, 62, 1134-1154.	0.9	1
116	Extracting the Acoustic Pressure Field from Large Eddy Simulation of Confined Reactive Flows. , 2010, , .		1
117	Prediction of Thermoacoustic Instabilities: Numerical Study of Mach Number Effects. , 2010, , .		1
118	Using Boundary Conditions to Account for Mean Flow Effects in a Zero Mach Number Acoustic Solver. , 2012, , .		1
119	Towards numerical prediction of red blood cells dynamics within a cytometer. Computer Methods in Biomechanics and Biomedical Engineering, 2013, 16, 9-10.	0.9	1
120	Surrogates for Combustion Instabilities in Annular Combustors. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2019, , 247-263.	0.2	1
121	Optimised Computational Functional Imaging for Arteries. Lecture Notes in Computer Science, 2008, , 420-429.	1.0	1
122	Realistic and patient specific blood flow simulations. Computer Methods in Biomechanics and Biomedical Engineering, 2007, 10, 175-176.	0.9	0
123	Computation of azimuthal combustion instabilities in an helicopter combustion chamber. , 2008, , .		0
124	Analysis and Modelling of Entropy Modes in a Realistic Aeronautical Gas Turbine. , 2013, , .		0
125	Large Eddy Simulation of Conjugate Heat Transfer Around a Multi-Perforated Plate With Deviation. , 2016, , .		0
126	Notice of Removal: A doppler-based regularization problem for intraventricular vector flow mapping. , 2017, , .		0



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127	Uncertainties for Thermoacoustics: A First Analysis. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2019, , 71-88.	0.2	0
128	Augmented patient-specific functional medical imaging by implicit manifold learning. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3325.	1.0	0
129	3-D Intraventricular Vector Flow Mapping Using Triplane Doppler Echo. Lecture Notes in Computer Science, 2021, , 587-594.	1.0	0
130	Application of UQ to Combustor Design. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2019, , 399-414.	0.2	0
131	Anisothermal Wall Functions for RANS and LES of Turbulent Flows With Strong Heat Transfer. , 2006, , 381-388.		0
132	Direct and Large-Eddy Simulations of a Turbulent Flow with Effusion. , 2006, , 415-422.		0