Daniel Mejia

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4 March 1983
French/Colombian
https://dmejia04.github.io/resume/

EDUCATION

INP (Institut National Polytechnique de Toulouse), *Toulouse FR.* www.inp-toulouse.fr
Ph.D. Fluid mechanics and Combustion Physics. *May 2014.*
Dissertation: "Wall temperature effects on flame response to acoustic oscillations"
Advisor: Dr. Thierry Poinsot. Co advisor: Dr. Laurent Selle.

ISAE-SUPAERO (Institut Supérieur de l'aéronautique et de l'espace), *Toulouse FR.* www.isae.fr
MSc. Aerodynamics, CFD and Propulsion. *June 2010.*
Thesis: "PIV analysis of the influence of a helium injection at the wing tip of a mockup in the development and lifetime of the wing-tip vortex."
Advisor: Dr. Laurent Joly.

Universitad de San Buenaventura, *Bogota CO.* www.usbbog.edu.co
BS. Aeronautical Engineering. *December 2007.*

RESEARCH EXPERIENCE

IMFT-CNRS (Institut de Mécanique des Fluides de Toulouse), *Toulouse FR.*
Postdoctoral Fellow. *January 2014- Present.*
Within the combustion laboratory of the PSC group at IMFT, I was in charge of the development of a new experiment for the study of flame dynamics and stabilisation. I singlehandedly carried out the test campaigns: preparation, monitoring and control, post-processing and analysis. The experiment includes many advanced laser-based diagnostic and high-speed cameras.
Currently I am responsible for the combustion laboratory and experiments of the PSC group at IMFT. I am in charge of coordinating the test campaigns performed by the postdocs, Ph.D candidates and interns.

IMFT (Institut de Mécanique des Fluides de Toulouse), *Toulouse FR.*
Doctoral Researcher. *October 2010- January 2013.*
I performed an experimental study of the coupling between flame dynamics and heat transfer to the burner. I also developed a low-order theoretical model that reproduces the experimental observations.

SKILLS AND TECHNIQUES

Experimental Fluid Mechanics	Wide experience in advanced experimental fluid mechanics measurement techniques such as Particle Imagine Velocimetry (PIV), Planar Laser-Induced Fluorescence (PLIF), Laser Doppler Velocimetry (LDV), infrared thermography and high-speed imaginary.
Signal and Image Processing	Writing advanced scripts for signal and image post-processing of large data files in Matlab and Python.
Computer-Aided Design (CAD)	Conception, draft design, modelling and development in Catia of several combustion test-rigs.
Computational Fluid Dynamics (CFD)	Performing meshing and CFD simulations for complex geometries in ICEM and Fluent. Post-processing CFD results from massively parallel computations of combustion instabilities from the ABVP solver.
Instrumentation and Automatization	Implementation of sensors with different type of operating principles. Development of several LabView programs for the synchronisation and control of the test-rigs.
Scientific Communication	Redaction and publications of several scientific articles. Presentation in international conferences including the International Combustion Symposium 2014 and 2016.

PUBLICATIONS

D. Mejia, M. Bauerheim, P. Xavier, B. Ferret, L. Selle, T. Poinsot
Stabilization of a premixed laminar flame on a rotating cylinder.
Proceedings of the Combustion Institute 000 (2016) 1–9

M. Miguel-Brebion, D. Mejia, P. Xavier, F. Duchaine, B. Bedat, L. Selle, T. Poinsot
Joint experimental and numerical study of the influence of flame holder temperature on the stabilization of a laminar methane flame on a cylinder.
Combustion and Flame 172 (2016) 153–161

D. Mejia, M. Miguel-Brebion, L. Selle
On the experimental determination of growth and damping rates for combustion instabilities.
Combustion and Flame 169 (2016) 287–296

D. Mejia, L. Selle, R. Bazile, T. Poinsot
Wall-temperature effects on flame response to acoustic oscillations.
Proceedings of the Combustion Institute 5 (2015) 3201–3208

D. Mejia
Wall-temperature effects on flame response to acoustic oscillations.
Ph.D Thesis, 2014

CONFERENCES

D. Mejia, M. Bauerheim, P. Xavier, B. Ferret, L. Selle, T. Poinsot
Stabilization of a premixed laminar flame on a rotating cylinder.
36th International Symposium on Combustion, Seoul, Korea. July 31 – August 5, 2016.

D. Mejia, L. Selle, R. Bazile, T. Poinsot
Wall-temperature effects on flame response to acoustic oscillations.
35th International Symposium on Combustion, San Fransico, USA. August 3 - August 8, 2014.

LANGUAGUES

French: Bilingual
Spanish: Bilingual
English: Fluent
Italian: Fluent

IT SKILLS

Operative Systems:
MAC OS, LINUX, Windows.
Langages:
Matlab, Python, Labview, HTML, CSS, Javascript, Latex, Swift.
Softwares:
Catia, Fluent, ICEM, Paraview, Photoshop, Illustrator.

HOBBIES

Football,
Snowboard,
Photography,
Web Developement,
BMX,
Running.

REFERENCES

Thierry Poinsot.
Research Director at CNRS
Institut de Mécanique des Fluides de Toulouse
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Laurent Selle.
Researcher at CNRS
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