

<b>Part A. PERSONAL INFORMATION</b>		<b>CV date</b>	May 2018
First and Family name	RAMON FERNANDEZ FERIA		
Researcher numbers	Researcher ID	F-2206-2010	
	Orcid code	0000-0001-9873-1933	

**A.1. Current position**

Name of University/Institution	UNIVERSIDAD DE MALAGA		
Department	INGENIERIA MECANICA, TERMICA Y DE FLUIDOS		
Address and Country	ETSII, DR ORTIZ RAMOS S/N, 29071 MALAGA, SPAIN		
Phone number	34-981982380	E-mail	<a href="mailto:ramon.fernandez@uma.es">ramon.fernandez@uma.es</a>
Current position	FULL PROFESSOR (CATEDRATICO DE UNIVERSIDAD)	From	1993
Espec. cód. UNESCO	220504, 220403		
Palabras clave	Fluid mechanics, aerodynamics, hydrodynamic instabilities, swirling flows, vortex interactions, kinetic theory of gases, plasma physics, buoyancy driven flows		

**A.2. Education**

Ph. D.	YALE UNIVERSITY	1987
M. Phil.	YALE UNIVERSITY	1986
Industrial Engineer (Chemical Engineer)	UNIVERSIDAD DE SEVILLA	1984

**A.3. JCR articles, h Index, thesis supervised...**

59 JCR articles, 24 as first or only author (61 publications in Scopus, 62 in Web of Science)  
 More than 70 conference presentations  
 9 doctoral thesis supervised, 2 more in progress  
 3 college books  
 15 Competitive Research Projects as PI (11 national, 2 regional, and 2 international)  
 h index: 12 (Scopus), 11 (Web of Science/Researcher ID), 14 (Google Scholar)  
 5 'SEXENIOS DE INVESTIGACION' from the CNEAI (last ending in 2013)

**Part B. CV SUMMARY** (max. 3500 characters, including spaces)

Industrial Engineer (Chemical Engineer) by the ETSII, University of Seville (1984). PhD by the School of Engineering and Applied Science at Yale University (1987); doctoral thesis awarded with the Henry Prentiss Becton Prize for 'Excellence in Engineering and Applied Science'.

Academic positions: Postdoctoral fellow, Mechanical Engineering Department, Yale University (1987); Postdoctoral fellow, Aeronautical School, Polytechnical University of Madrid (1988); Associate Professor, ETSI Industriales, University of Seville (1989); Professor, ETSI Industriales, University of Málaga (1993 to present).

Director of the ETSI Industriales, University of Málaga, from 2004 to 2012 (two terms).

Currently my research interest is mainly focused on non-steady aerodynamics and vortical flows at low Reynolds numbers applied to flapping flight problems, especially to the propulsion of micro air vehicles and swimming robots. Also on buoyancy driven flows applied to natural ventilation. Previously I have worked in kinetic theory of gases, plasma physics, hydrodynamic instabilities, swirling flows and vortex breakdown, combustion, etc., with applications mainly related to aeronautics and renewable energy systems.

## Part C. RELEVANT MERITS

### C.1.A Publications: Selected JCR articles

R. Fernandez-Feria (2017). Note on optimum propulsion of heaving and pitching airfoils from linear potential theory. *J. Fluid Mech.*, **826**, 781-796.

V. M. Ortega-Jimenez, A. Martin-Alcantara, R. Fernandez-Feria y R. Dudley (2017). On the autorotation of animal wings. *J. R. Soc. Interface*, **14**, 20160870.

R. Fernandez-Feria (2016). Linearized propulsion theory of flapping airfoils revisited. *Phys. Rev. Fluids*, **1**, 084502.

R. Fernandez-Feria and F. Castillo-Carrasco (2016). Buoyancy effects in a wall jet over a heated horizontal plate. *J. Fluid Mech.*, **793**, 21-40.

A. Martín-Alcántara, R. Fernandez-Feria and E. Sanmiguel-Rojas (2015). Vortex flow structures and interactions for the optimum thrust efficiency of a heaving airfoil at different mean angles of attack. *Physics of Fluids* **27**, 073602-1-23.

A. Martín-Alcántara, E. Sanmiguel-Rojas y R. Fernandez-Feria (2015). On the development of lift and drag in a rotating and translating cylinder. *J. Fluids Structures* **54**, 868-885.

R. Fernandez-Feria and J. Alaminos-Quesada (2015). Purely pulsating flow of a viscoelastic fluid in a pipe revisited: The limit of large Womersley number. *J. Non-Newtonian Fluid Mech.* **217**, 32-36.

R. Fernandez-Feria, C. del Pino and A. Fernandez-Gutierrez (2014). Separation in the mixed convection boundary-layer radial flow over a constant temperature horizontal plate. *Physics of Fluids* **26**, 103603-1-18.

D. Cebrian, J. Ortega-Casanova and R. Fernandez-Feria (2013). Lift and drag characteristics of a cascade of plates in a configuration of interest for a tidal current energy converter: Numerical simulations analysis. *J. Renewable Sustainable Energy* **5**, 043114-1-19.

C. del Pino, L. Parras, M. Felli and R. Fernandez-Feria (2011). Structure of trailing vortices: Comparison between particle image velocimetry measurements and theoretical models. *Phys. Fluids* **23**, 013602-1-12.

M. A. Herrada, C. del Pino and R. Fernandez-Feria (2008). Stability of the boundary layer flow on a long thin rotating cylinder. *Phys. Fluids*, **20**, 034105-1-11.

J. Ortega-Casanova and R. Fernandez-Feria (2008). A numerical method for the study of nonlinear stability of axisymmetric flows based on the vector potential. *J. Comput. Phys.*, **227**, 3307-3321.

L. Parras and R. Fernandez-Feria (2007). Spatial stability and the onset of absolute instability of Batchelor's vortex for high swirl numbers. *J. Fluid Mech.*, **538**, 27-43.

R. Fernandez-Feria (2006). Dam-break flow for arbitrary slopes of the bottom. *J. Engng. Math.*, **54**, 319-331.

R. Fernandez-Feria and E. Sanmiguel-Rojas (2004). An explicit projection method for solving incompressible flows driven by a pressure difference. *Computers and Fluids*, **33**, 463-483.

R. Fernandez-Feria and C. del Pino (2002). The onset of absolute instability of rotating Hagen-Poiseuille flow: A spatial stability analysis. *Phys. Fluids*, **14**, 3087-3097.

R. Fernandez-Feria (2002). Stability analysis of boundary layer flow due to the presence of a small hole on a surface. *Phys. Rev. E*, **65**, 036307-1,036307-7.

R. Fernandez-Feria (2000). Axisymmetric instabilities of Bodewadt flow. *Phys. Fluids*, **12**, 1730-1739.

R. Fernandez-Feria (1999). Nonparallel linear stability analysis of Long's vortex. *Phys. Fluids*, **11**, 1114-1126.

R. Fernandez-Feria (1996). Viscous and inviscid instabilities of non-parallel selfsimilar axisymmetric vortex cores. *J. Fluid Mech.*, **323**, 339-365.

R. Fernandez-Feria, J. Fernandez de la Mora and A. Barrero (1995). Solution breakdown in a family of selfsimilar nearly-inviscid axisymmetric vortices. *J. Fluid Mech.*, **305**, 77-91.

J.R. Sanmartin, J.Ramirez, R. Fernandez-Feria and F. Minotti (1992). Selfconsistent, Nonlocal Electron Heat Flux at Arbitrary Ion Charge Number. *Phys. Fluids B*, **4**, 3579-3585.

R. Fernandez-Feria (1989). Hypersonic expansion of the Fokker-Planck equation. *Phys. Fluids A*, **1**, 394-402.

R. Fernandez-Feria and J. Fernandez de la Mora (1987). Shock wave structure in gas mixtures with large mass disparity. *J. Fluid Mech.*, **179**, 21-40.

## C.1.B Publications: Books

R. Fernandez-Feria. Mecánica de Fluidos. SPICUM, Universidad de Málaga (ISBN: 84-7496-897-6). 2001.

R. Fernandez-Feria, C. del Pino and J. Ortega Casanova. Problemas resueltos de mecánica de fluidos. SPICUM, Universidad de Málaga (ISBN: 84-9747-144-X). 2006.

R. Fernandez-Feria and C. del Pino. Introducción a la Combustión. SPICUM, Universidad de Málaga (ISBN: 84-9747-133-4). 2006.

## C.2. Research projects and grants (last 10 years)

Reference: DPI2016-76151-C2-1-R

Título: Forward-flight aerodynamics of a MAV with two pairs of flapping wings

PI: R. Fernandez-Feria

Dates: 01/01/2017-31/12/2019

Financed by: Ministerio de Economía y Competitividad, Spanish Government (99,220.00 €)

Reference: DPI2013-40479-P

Título: Aerodynamic study of flapping wings like in a dragonfly for use in micro air vehicles

PI: R. Fernandez-Feria

Dates: 01/01/2014-31/12/2017

Financed by: Ministerio de Economía y Competitividad, Spanish Government (108,900.00 €)

Reference: ENE2010-16851

Título: Hydrodynamic study of the wakes behind airfoils and sails applied to the optimization of tidal energy systems, and the reduction of their environmental impact.

PI: R. Fernandez-Feria

Dates: 1/10/2010-30/6/2014

Financed by: Ministerio de Ciencia e Innovación, Spanish Government (102,850.00 €)

Reference: P08-TEP-3867

Título: Experimental study on the stability of the flow along rotating cylindrical bodies

PI: R. Fernandez Feria

Dates: 15/04/2009-14/04/2012

Financed by: Junta de Andalucía (Andalusian Government), Spain (235,500.00 €)

Reference: FIS2007-60161

Title: 3D structure of intense swirling jets: applications to seabed excavation and combustion.

PI: R. Fernandez-Feria

Dates: 01/10/2007-30/09/2010

Financed by: Ministerio de Educación y Cultura, Spanish Government (98,615.00 €)

Reference: P05-TEP-170

Title: Experimental measurements of wing tip vortices by PIV and its comparison with theoretical models

PI: R. Fernandez-Feria

Dates: 01/04/2006-31/03/2009

Financed by: Junta de Andalucía (Andalusian Government), Spain (206,000.00 €)

Reference: AST4-CT-2005-012238

Title: Fundamental research on aircraft wake phenomena (FAR-Wake)

PI: R. Fernandez-Feria (Partner 15, University of Malaga)

Dates: 01/02/2005-31/05/2008

Financed by: European Union (55,004.00 €)

## C.5. Institutional responsibilities

Director of the Industrial Engineering School (ETS de Ingeniería Industrial), University of Malaga: 2 terms (2004-2012).

President of the Panel for Production Technologies of the Andalusian Research Plan, Junta de Andalucía (Andalusian Government): 1999-2003.

## C.6. Awards

Henry Prentiss Becton Prize for 'Excellence in Engineering and Applied Science', Yale University, 1988.