

(Maximum: 5 pages)

Part A. PERSONAL INFORMATION		CV date		Sep 27th, 2020
First and Family name	Ernesto García Vadillo			
Social Security, Passport, ID number	14.932.043Y	Age	60	
Researcher codes	WoS Researcher ID (*)			
	SCOPUS Author ID(*)	6602499683		
	Open Researcher and Contributor ID (ORCID) **	0000-0001-6676-1759		

(*) At least one of these is mandatory

(**) Mandatory

A.1. Current position

Name of University/Institution	University of The Basque Country		
Department	Department of Mechanical Engineering		
Address and Country	Plaza Ingeniero Torres Quevedo, 1 ; 48013-Bilbao		
Phone number	946014223	E-mail	ernesto.garciavadillo@ehu.eus
Current position	Full Professor	From	May 8th, 1992
Key words	Mechanical Engineering, Railway Engineering, Noise		

A.2. Education

PhD	University	Year
Ind Engin (Mechanical)+MSc	University of The Basque Country	June, 1981
PhD	University of The Basque Country	Dec, 1983

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

Number of sexennia:	6
Last sexenium:	December 2019
Number of Doctoral Thesis supervised:	8
Number of Q1 (1sr quartile) JCR papers:	16
H index:	13

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

Doctoral Thesis on wheel-rail contact. Teaching experience in Railway Engineering for the last thirty three years. Head of the Mechanical Engineering Department of the University of The Basque Country until 2006. Author of publications on noise and specifically on railway noise and its mechanical sources in wheel-rail contact. Since 1988 he has collaborated mainly with Euskotren, with Euskal Trenbide Sarea - Basque Railway Network (ETS-RFV) and with various engineering companies in research projects on railway noise and its suppression. He was the leader of the Transportation Environmental Safety and Impact Program, Science, Technology and Society Plan (2005-2008) and member of the Transport Panel that designs the National Science and Technology Strategy and the National R & D Plan 2008-2011. Founding member of the European network of excellence in railway research, EURNEX. Member of the Permanent Academia Group of the European Railway Research Advisory Council (ERRAC). Member of the European Research Network Railenium2020. Advisor to the European Parliament regarding the 4th Railway Package, on interoperability, safety and new responsibilities for the European Railway Agency. Member of the Board of Directors of ETS-RFV. His work team was awarded the V TALGO Technological Research Prize, for the development of a model to prevent the appearance of a short wave corrugation on rails and the suppression of that rolling noise source.

Part C. RELEVANT MERITS

C.1. Publications (only JCR journals – only last 10 years)

N.Correa, G^aVadillo, J.Santamaria, J.Blanco Lorenzo, "On the non-proportionality between wheel/rail contact forces and speed during wheelset passage over specific welds", Journal of Sound and Vibration, (DOI: 10.1016/j.jsv.2017.10.031), Vol 413, 79-100, 2018



J. Blanco Lorenzo, J. Santamaria, E. G. Vadillo, N. Correa, “A contact mechanics study of 3D frictional conformal contact”, *Tribology International*, (DOI: 10.1016/j.triboint.2017.10.022), Vol 119, 143–156, 2018

J. Blanco-Lorenzo, J. Santamaria, E.G.Vadillo, N. Correa, “On the influence of conformity on wheel-rail rolling contact mechanics”, *Tribology International*, (DOI: 10.1016/j.triboint.2016.07.017), Vol 103, 647-667, 2016

N. Correa, E.G.Vadillo, J. Santamaria, J. Herreros, “A versatile method in the space domain to study short-wave rail undulatory wear caused by rail surface defects”, *WEAR* (DOI: 10.1016/j.wear.2016.02.012), Vol.: 352, Pages: 196-208, 2016.

N. Correa, E.G.Vadillo, J. Santamaria, J. Gómez, “On the study of train-track dynamic interactions caused by rail welds on discrete supported rails”, *WEAR* (DOI: 10.1016/j.wear.2013.11.044), Vol.: 314, Pages: 291-298, 2014

J. Santamaria, J. Herreros, E.G.Vadillo, N. Correa, “Design of an optimised wheel profile for rail vehicles operating on two track gauges”, *Vehicle System Dynamics* (DOI: 10.1080/00423114.2010.536557), Vol.: 51, nº 1, Pages: 54-73, January 2013.

G. Garate, E.G. Vadillo, J. Santamaria, D. Pardo, “Solution of 3D-Helmholtz equation in exterior domains using Spherical Harmonic Decomposition”, *Computers & Mathematics with Applications*, (DOI: 10.1016/j.camwa.2012.06.010), Vol 64, pp. 2520-2543, 2012

N. Correa, E. G. Vadillo, J. Santamaria, J. Gomez, “A rational fraction polynomials model to study vertical dynamic wheel-rail interaction”, *Journal of Sound and Vibration*. (DOI: 10.1016/j.jsv.2011.12.012), Vol.: 331, nº 8, Pages: 1844-1858, 2012

N. Correa, O. Oyarzabal, E. G. Vadillo, J. Santamaria, J. Gomez, “Rail corrugation development in high speed lines”, *WEAR*. Vol.: 271, Pages: 2438-2447, 2011.

O. Oyarzabal, N. Correa, E. G. Vadillo, J. Santamaria, J. Gómez, “Modelling rail corrugation with specific-track parameters focusing on ballasted track and slab track”, *Vehicle System Dynamics*. (DOI: 10.1080/00423114.2010.536557), Vol.: 49, nº 11, Pages: 1733-1748, Nov. 2011.

J. Blanco-Lorenzo, J. Santamaria, E.G. Vadillo and O. Oyarzabal, “Dynamic comparison of different types of slab tracks and ballasted track using a flexible track model”, *Journal of Rail and Rapid Transit*. (DOI:10.1177/0954409711401516), Vol 225, nº 6, Pages: 575-593, Nov 2011.

J.Santamaría, E. G. Vadillo, O. Oyarzabal, “Wheel-rail wear index prediction considering multiple contact patches”, *WEAR*, Vol.: 267, Pages: 1100-1104, 2009

O. Oyarzabal, I. Gómez, J.Santamaría, E. G. Vadillo, “Dynamic optimization of track components to minimize rail corrugation”, *Journal of Sound and Vibration*, Vol.: 319, Pages 904-917, 2009

J.Santamaría, E. G. Vadillo, I. Gómez, “Influence of creep forces on the risk of derailment of railway vehicles”, *Vehicle System Dynamics*, Vol.: 47 nº 6, Pages 721-752, 2009

C.2. Research projects and grants

C.2.a. European Projects:

- Title and Ref: ***IN2TRACK3 – – Research into optimised and future Railway infrastructure (S2R-CFM-IP3-01-2020 Innovation Action)***
Leader: ***EGV***
Financed by: ***European Commission - Horizon 2020***
From: ***1/Ene/2021*** To: ***1/01/2024;*** Amount: ***119.987 €***
- Title and Ref: ***IN2TRACK2 – Research into enhanced track and switch and crossing system 2 (H2020-S2R-CFM-IP3-01-2018 – Ref: 826255)***
Leader: ***EGV***
Financed by: ***European Commission - Horizon 2020***
From: ***1/Nov/2018*** To: ***30/04/2021;*** Amount: ***74.081,25 €***
- Title and Ref: ***IN2TRACK – Research into enhanced tracks, switches and structures (H2020- S2R-CFM-IP3-01-2016 - Grant Agreement Ref.: 730841)***
Leader: ***EGV***
Financed by: ***European Commission - Horizon 2020***

- From: **1/Jul/2016** To: **30/04/2019** Amount: **17.776,25 €**
- 4 Title and Ref: **Shift2Rail – Associated Members (IP3) - SWITRACK'EN, tracks, switches, crossings, and efficient energy (Ref.: C-2015-8674).**
Leader: **EGV**
Financed by: **European Commission - Horizon 2020**
From: **1/Ago/2015** To: **31/12/2024**
Amount: **290.000 € (partially included in IN2TRACK, IN2TRACK2 & IN2TRACK3)**
- 5 Title and Ref: **European Rail Research Network of Excellence EUR2EX (Ref: FP6-PLT506513)**
Leader: **EGV**
Financed by: **European Commission – 6th FP**
From: **01/01/2004** To: **31/03/2008**
Amount: **45.200,00 € plus travel expenses (reimbursed directly by coord)**
- 6 Title and Ref: **Sound and Vibration Network in Europe (Ref: ERBCHRXCT930397)**
Leader: **EGV**
Financed by: **European Commission – 3rd FP. Research DG (DG XII)**
From: **01/01/1994** To: **31/12/1995**
Amount: **41.623,12 €**

C.2.b. National and Regional Projects (only last 10 years):

- 7 Title and Ref: **CONFRIC: Wheel/Rail Contact Modelling for real FricTion conditions – Mejora de modelos de contacto rueda-carril y su aplicación a condiciones reales de fricción (Ref: PID2019-109483RB-I00)**
Leaders: **EGV, Javier Santamaría**
Financed by: **Spanish Ministry: Ministerio de Economía y Competitividad. Programa estatal de investigación, desarrollo e innovación orientada a los retos de la sociedad. + FEDER funds from the European Union.**
From: **01/06/2020** To: **31/05/2024;**
Amount: **106.480**
- 8 Title and Ref: **WARMED: Wheel And Rail Modelling for Enhanced Durability - Desarrollo de modelos para reducir el desgaste de ruedas y carriles ferroviarios (Ref: TRA2014-59599-R)**
Leaders: **EGV, Javier Santamaría**
Financed by: **Spanish Ministry: Ministerio de Economía y Competitividad. Programa estatal de investigación, desarrollo e innovación orientada a los retos de la sociedad. + FEDER funds from the European Union.**
From: **01/01/2015** To: **31/12/2018;** Amount: **71.000,00 € + 14.910,00 € (indirec)**
- 9 Title and Ref: **MercaTREN: Incremento de peso por eje y velocidad en trenes de mercancías: aspectos Mecánicos derivados de las nuevas condiciones de contacto rueda-carril (TRA2010-18386)**
Leader: **EGV**
Financed by: **Spanish Ministry: Ministerio Ciencia e Innovación. Plan Nacional I+D+I + Fondos FEDER de la Unión europea.**
From: **01/12/2010** To: **31/03/2015;** Amount: **71.000,00 € + 14.910,00 € (indir)**
- 10 Title and Ref: **Estudio del comportamiento a medio y largo plazo de las estructuras ferroviarias de balasto y placa (PT2006-024-19CCPM)**
Leader: **EGV**
Financed by: **Spanish Ministry: Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica – Centro de Estudios y Experimentación de Obras Públicas (CEDEX)**



- From: **01/12/2006** To: **31/10/2009;** Amount: **54.296 €**
- 11 Title and Ref: ***Interacción vehículo-vía: Métodos de diseño de perfiles de rodadura de baja agresividad a la vía para bogies de doble ancho (FOM/2251/2006-T83)***
- Leader: **EGV**
- Financed by: **Spanish Ministry: Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica – Programa Nacional de Medios de Transporte y Construcción. Ministerio Fomento y Ministerio Ciencia e Innovación**
- From: **01/12/2006** To: **31/12/2010;** Amount: **85.966 €**
- 12 Title and Ref: ***Desarrollo de métodos avanzados de optimización orientados a problemas mecánicos, estructurales y de sistemas de transporte" (Ref. IT919-16)***
- Leader: **EGV**
- Financed by: **Basque Government: Departamento Investigación Gobierno Vasco**
- From: **01/01/2016** To: **31/12/2021;** Amount: **399.988,00 €**
- 13 Title and Ref: ***Diseño avanzado de estructuras, componentes y sistemas de transporte mediante técnicas innovadoras de optimización(IT691-13)***
- Leader: **EGV**
- Financed by: **Basque Government: Departamento Investigación Gobierno Vasco**
- From: **01/01/2013** To: **31/12/2015;** Amount: **81.400,00 €**
- 14 Title and Ref: ***Nuevas técnicas de optimización aplicadas a estructuras, componentes y sistemas de transporte terrestre y aéreo (IT453-10)***
- Leader: **EGV**
- Financed by: **Basque Government: Departamento Investigación Gobierno Vasco**
- From: **01/01/2010** To: **31/12/2012;** Amount: **66.000,00 €**
- 15 Title and Ref: ***Optimización estructural y su aplicación a sistemas de transporte(GIC07/60-IT-302-07)***
- Leader: **EGV**
- Financed by: **Basque Government: Departamento Investigación Gobierno Vasco**
- From: **01/01/2007** To: **31/12/2009;** Amount: **75.832,25 €**

C.3. Contracts (Selected contracts from only the last 10 years)

- 1 Title and Ref: ***Concepción y puesta en práctica de estrategias efectivas contra el desgaste ondulatorio en carriles ferroviarios (Ref. PT10469)***
- Leader: **Javier Santamaría Manrique**
- Financed by: **Ente Público Red Ferroviaria Vasca – Euskal Trenbide Sarea**
- From: **01/10/2017** To: **31/10/2021**
- Amount: **87.170 Eur**
- 2 Title and Ref: ***Intercomparación de Track Decay Rate, Rugosidad de Carril y Ruido (Ref. TR40619)***
- Leader: **EGV**
- Financed by: **CETEST –CAF Group**
- From: **01/12/2015** To: **1/01/2017**
- Amount: **3.993 Eur**
- 3 Title and Ref: ***Desarrollo de herramientas para el mantenimiento inteligente de la vía (Ref. PT10314)***
- Leader: **Javier Santamaría Manrique**
- Financed by: **Ente Público Red Ferroviaria Vasca – Euskal Trenbide Sarea**



From: **01/01/2015** To: **31/01/2018**
Amount: **27.500 Eur (+15% University-Industry Comisión + 21% VAT)**

4 Title and Ref: **Aumento del Ciclo de Vida de la Vía (Ref. PT10013)**
Leader: **EGV**
Financed by: **Ente Público Red Ferroviaria Vasca – Euskal Trenbide Sarea**
From: **01/03/2010** To: **01/03/2013**
Amount: **20.000 Eur**

5 Title and Ref: **Desarrollo de una nueva metodología para la optimización estructural de componentes de la Industria Ferroviaria (Ref. contract UE06/18)**
Leader: **Javier Canales Abaitua**
Financed by: **Construcciones y Auxiliarde Ferrocarriles CAF, S.A.**
From: **01/01/2007** To: **31/12/2009**
Amount: **64.200 Eur + 15.000 Eur**

C.4. Patents

INVENTORS: J. Santamaría, J. Herreros, E. G. Vadillo

TÍTULO: Wheel profile for double gauge bogies, with UIC and Iberian gauge.

NUMBER AND DATE OF CONCESION OF THE EXAMINATION: P201131045; Octob 22, 2013

C.5, C.6, C.7... (e. g., Institutional responsibilities, memberships of scientific societies...)