MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	12/12/21

First name	Vladislav		
Family name	Mantič Leščišin		
URL Web SISIUS https://bibliometria.us.es/prisma/investigador/2426			
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-7569-7442		

(*) Mandatory

A.1. Current position

Position	Full Professor (Catedrático de Universidad)	
Initial date	06/02/2009	
Institution	Universidad de Sevilla	
Department/Center	Continuum Mechanics and Structural Analysis	Engineering School
Country	Spain	
Key words	Computational Mechanics, Fracture Mechanics, Contact Mechanics, Composites, Anisotropic Elasticity, Singular Elastic Solutions, BEM, FEM	

A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
13/05/2004 – 05/02/2009	Associate Professor (Profesor Titular de Universidad) / Universidad de Sevilla / Spain
01/10/1998 – 12/05/2004	Assistant Professor (Profesor Asociado) / Universidad de Sevilla /Spain
01/01/1998 – 30/09/1998	Visiting Professor (Profesor Visitante) / Universidad de Sevilla /Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Dr. in Technical Sciences	Czech Academy of Sciences, Prague	1993
Licensed in Mathematical Engineering	Czech Technical University of Prague, Faculty of Nuclear Sciences and Physical Engineering	1984

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

His current research is related to Fracture Mechanics, Solid Mechanics, Computational Mechanics and Composites, where he has achieved several relevant results published in the included list of journal publications. He has mainly worked on various non-classical approaches to fracture problems:

i) Interfacial Fracture Mechanics for perfectly bonded interfaces and spring interfaces focusing on prediction of interface crack onset and propagation, crack kinking towards adjacent bulk, crack interaction with a straight and curved interface, and on fracture-mode mixity for interface cracks.

ii) prediction of brittle crack onset by the Coupled Criterion of Finite Fracture Mechanics (CCFFM), applying this methodology to initiation of fracture in various structural configurations elements (fiber-matrix interface, spherical particle-matrix interface, cross plies, adhesive joints, and reinforcements considering either perfectly bonded or spring interfaces, stress concentrations), he also used CCFFM to study the effect of T-stress on crack propagation stability. Moreover, he has

developed two new formulations of CCFFM, the first is used by other researchers when applying CCFFM to more complex problems. The second is more suitable for general computational implementations in FEM codes than the classical formulation of CCFFM.

iii) characterization of stress singularities in a) anisotropic multi-material corners/cracks with various kinds of boundary and interface conditions including frictional sliding contact by developing a general semi-analytic procedure based on an original powerful matrix formalism, b) corners/cracks with spring boundary conditions deducing new asymptotic series for such corners employing an original recursive procedure.

iv) development of a theoretical formation and computational implementation of the so-called Linear Elastic-(perfectly) Brittle Interface Model (LEBIM), and its numerous successful applications to fracture problems in composites and their joints.

He has recently developed with S.G. Mogilevskaya a numerical technique based on Gurtin-Murdoch surface elasticity model for prestressed nano-scale membranes embedded in a matrix, to model 2D nano-reinforcements, platelets, like graphene.

He has also developed an efficient and robust algorithm for the numerical solution of friction contact problems with R. Vodicka and T. Roubicek.

He appears on the "World's Top 2% Scientists List" by Stanford University (March 2021) in the area of Materials. He has been invited to deliver 2 Keynote lectures at European Conferences ECCM16 in 2014 and EURADH in 2021.

He has edited a book for Imperial College Press focused on Mathematical Methods and Models in Composites. The second and updated edition of this book, including several new chapters is in print.

He has collaborated and published joint articles with the following foreign researchers: J. Berger (Colorado School of Mines, USA), A. Carpinteri (POLITO, Italy), P. Cornetti (POLITO, Italy), LJ. Gray (ORNL, USA), A. Ingraffea (Cornell U., USA), M. Kashtalyan (U. Aberdeen, United Kingdom), D. Lesnic (U. Leeds, United Kingdom), L. de Lorenzis (TU Braunschweig, Germany), L. Marin (U. Leeds, United Kingdom), P. Martin (Colorado School of Mines, USA), NL. McCartney (NPL Teddington, United Kingdom), S. Mogilevskaya (U. Minnesota, USA), M. Paggi (IMT Lucca, Italy), CG. Panagiotopoulos (FORTH, Heraklion, Greece), T. Roubíček (Charles U., Prague, Czech Rep.), A. Salvadori (U. Brescia, Italy), A. Sapora (POLITO, Italy), J. Varna (Lulea TU, Sweden), R. Vodička (TUKE, Košice, Slovakia), and A.Y. Zemlyanova (Kansas State U.).

He has supervised or co-supervised 8 Doctoral Theses, 2 of them obtained extraordinary doctorate prize by Universidad de Sevilla, Dr. Elena Correa (2008) and Dr. Israel García (2014).

He has been Coordinator or Principal Investigator in 9 international, European, national and regions research and infrastructure projects active during the last 10 years with the total funding obtained by 4.153.500 EUR. The most outstanding is NEWFRAC (H2020-MSCA-ITN-2019), training 13 PhD students in computational fracture mechanics.

He is working as Independent Expert of the European Commission (EX2002B030092) for evaluation of research projects: H2020-MSCA-IF-2017 (6/10/2017-3/12/2017), HORIZON-MSCA-2021-PF-01 (05/11/2021-28/01/2022). He was member of the Committee for Accreditation of Associate Professors, Spanish National Agency for Evaluation, Quality and Accreditation (ANECA) (2011-2013).

He was Director of the Doctoral Program in Mechanical Engineering and Industrial Management of Universidad de Sevilla from 2015 to 2021.

Finally, although he is signer of DORA, some classical indicators are included:

Web of Science (G-1111-2010): 124 documents, 1988 cites, h-index=24

Scopus (24067572200): 162 documents, 2423 cites, h-index=29 (1428 cites, h=20 excluding self-citations)

Google Scholar (nuSieFgAAAAJ): 3497 cites, h-index=35

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications (Articles in High Impact Journals and one Edited book)

1. **Edited Book**. Mantič V. (Ed.) (2014) Mathematical Methods and Models in Composites, Imperial College Press.
2. **International Journal.** Mogilevskaya S.G., Zemlyanova A.Y., Mantič V. (2021) The use of the Gurtin-Murdoch theory for modeling mechanical processes in composites with two-dimensional reinforcements. Composites Science and Technology 210:10875.

3. **International Journal.** Leite A., Mantič V., París F. (2021) Crack onset in stretched open hole PMMA plates considering linear and non-linear elastic behaviours. Theoretical and Applied Fracture Mechanics 114:102931.
4. **International Journal.** Baranova S., Mogilevskaya S.G., Mantič V., Jiménez-Alfaro S. (2020) Analysis of the Antiplane Problem with an Embedded Zero Thickness Layer Described by the Gurtin-Murdoch Model. Journal of Elasticity 140:171–195.
5. **International Journal.** Jimenez-Alfaro S., Villalba V., Mantic V. (2020) Singular elastic solutions in corners with spring boundary conditions under anti-plane shear. International Journal of Fracture 223:197-220.
6. **International Journal.** Aranda M.T., García I.G., Reinoso J., Mantič V., Paggi M. (2020) Crack arrest through branching at curved weak interfaces: An experimental and numerical study. Theoretical and Applied Fracture Mechanics 105:102389.
7. **International Journal.** Barroso A., Marín J.C., Mantič V., París F. (2020) Premature failures in standard test specimens with composite materials induced by stress singularities in adhesive joints. International Journal of Adhesion and Adhesives 97:102478.
8. **International Journal.** Muñoz-Reja M., Távara L., Mantič V., Cornetti P. (2020) A numerical implementation of the Coupled Criterion of Finite Fracture Mechanics for elastic interfaces. Theoretical and Applied Fracture Mechanics 108, 102607.
9. **International Journal.** García I.G., Justo J., Simon A., Mantič V. (2019) Experimental study of the size effect on transverse cracking in cross-ply laminates and comparison with the main theoretical models. Mechanics of Materials 128:24-37.
10. **International Journal.** Távara L., Moreno L., Paloma E., Mantič V. (2019) Accurate modelling of instabilities caused by multi-site interface-crack onset and propagation in composites using the sequentially linear analysis and Abaqus. Composite Structures 225, 110993.
11. **International Journal.** Cepero F., García I.G., Justo J., Mantič V., París F. (2019) An experimental study of the translaminar fracture toughnesses in composites for different crack growth directions, parallel and transverse to the fiber direction. Composites Science and Technology 181:107679.
12. **International Journal.** Távara L., Reinoso J., Blázquez A., Mantič V. (2019) On the 3D extension of failure models for adhesive joints under mixed-mode fracture conditions: LEBIM and CZM. Theoretical and Applied Fracture Mechanics 100, 362–376.
13. **International Journal.** Kashtalyan M., García I.G., Mantič V. (2018) Coupled stress and energy criterion for multiple matrix cracking in cross-ply composite laminates. International Journal of Solids and Structures 139:189-199.
14. **International Journal.** García I.G., Mantič V., Blázquez A. (2018) The effect of residual thermal stresses on transverse cracking in cross-ply laminates: an application of the coupled criterion of the finite fracture mechanics. International Journal of Fracture. 211:1-14.
15. **International Journal.** Panagiotopoulos C.G., Mantič V., Roubíček T. (2018) Two adhesive-contact models for quasistatic mixed-mode delamination problems. Mathematics and Computers in Simulation 145:18-33.
16. **International Journal.** Távara L., Reinoso J., Castillo D., Mantič V. (2018) Mixed-mode failure of interfaces studied by the 2D linear elastic–brittle interface model: Macro- and micro-mechanical finite-element applications in composites. The Journal of Adhesion, 94:8, 627-656.
17. **International Journal.** Dimitri R., Cornetti P., Mantič V., Trullo M., Lorenzis L. (2017) Mode-I debonding of a double cantilever beam: A comparison between cohesive crack modeling and Finite Fracture Mechanics. International Journal of Solids and Structures 124:57-72.
18. **International Journal.** Vodička R., Mantič V., Roubíček T. (2017) Quasistatic normal-compliance contact problem of visco-elastic bodies with Coulomb friction implemented by QP and SGBEM. Journal of Computational and Applied Mathematics 315: 249-272.
19. **International Journal.** Vodička R., Mantič V. (2017) An energy based formulation of a quasi-static interface damage model with a multilinear cohesive law. Discrete & Continuous Dynamical Systems-S 10:1539-1561.
20. **International Journal.** Sapora A., Cornetti P., Mantič V. (2016) T-stress effects on crack deflection: Straight vs. curved crack advance. European Journal of Mechanics-A/Solids 60:52-57.
21. **International Journal.** Barroso A., Lauke B., Mantič V., París F. (2016) Tensile and shear strength of bimaterial interfaces within composite materials. Composites Science and Technology 124:81-88.

22. **International Journal.** García I.G., Carter B.J., Ingraffea A., Mantič V. (2016) A numerical study of transverse cracking in cross-ply laminates by 3D finite fracture mechanics. Composites Part B: Engineering. 95:475-487.
23. **International Journal.** Muñoz-Reja M., Távara L., Mantič V., Cornetti P. (2016) Crack onset and propagation at fibre–matrix elastic interfaces under biaxial loading using finite fracture mechanics. Composites: Part A 82:267–278.

C.2. Congresses (Keynote Lectures)

1. Mantič V., New results on the asymptotic behaviour of stresses near the tips of corners and cracks with spring boundary conditions (Keynote Lecture). EURADH 2021 - 13th European Adhesion Conference (virtual meeting due to covid19 situation). October 11 - 14, 2021.
2. Mantič V., Prediction of initiation and growth of cracks in composites. Coupled stress and energy criterion of the finite fracture mechanics (Keynote Lecture). ECCM16 - 16th European Conference on Composite Materials, Sevilla, Spain. June 22-26, 2014.

C.3. Research projects (Coordinator and PI)

1. H2020-861061. New strategies for multifield fracture problems across scales in heterogeneous systems for Energy, Health and Transport (NEWFRAC). Research Executive Agency, European Commission (H2020-MSCA-ITN-2019). Coordinator: Mantič, Vladislav (Universidad de Sevilla). 01/05/2020-30/04/2024. 3.359.824,20 EUR.
2. P18-FR-1928. Predicción de daño en uniones adhesivas con materiales compuestos usando la Mecánica de la Fractura Finita. Desarrollo y aplicación de nuevos elementos finitos singulares (DAMCOMP). Plan Andaluz de Investigación, Desarrollo e Innovación (PAIDI 2020) PI: Barroso Alberto / Mantič, Vladislav (Universidad de Sevilla). 1/1/2020-31/12/2022. 89.800,00 EUR.
3. US-1266016. Nuevas soluciones elásticas asintóticas para grietas con condiciones de contorno cohesivas o de elasticidad de superficie y su aplicación en la implementación de nuevos elementos finitos y de contorno singulares. Universidad de Sevilla. Programa Operativo FEDER de Andalucía 2014-2020. PI: Mantič, Vladislav / Távara, Luis (Universidad de Sevilla). 1/2/2020-30/04/2022. 90.000,00 EUR.
4. PGC2018-099197-B-I00. Soluciones Elásticas Singulares para Esquinas y Grietas con Condiciones de Contorno Cohesivas o de Elasticidad de Superficie. Desarrollo de Elementos Finitos Especiales (SINGSOL). Ministerio de Ciencia, Innovación y Universidades. PI: Mantič, Vladislav / Távara, Luis (Universidad de Sevilla). 1/1/2019-31/12/2021. 60.500,00 EUR.
5. MAT2015-71036-P. Nuevos Enfoques de la Mecánica de la Fractura Computacional para la Caracterización de Inicio y Crecimiento de Grietas en Materiales Compuestos en Diferentes Escalas. Ministerio de Economía y Competitividad. PI: Mantič, Vladislav / Blázquez, Antonio M. (Universidad de Sevilla). 1/1/2016-31/12/2018. 59.290,00 EUR.
6. UNSE15-CE-3581. Aplicaciones de técnicas tridimensionales de videocorrelación de imagen de muy alta velocidad para el estudio de deformaciones y daño en materiales compuestos aeronáuticos. Ministerio de Economía y Competitividad (Infraestructuras FEDER Institucionales). PI: Mantič, Vladislav (Universidad de Sevilla). 01/01/2016-30/06/2018. 136.900,00 EUR.
7. IE141234. Modelling multiple transverse cracking in composite laminates. Royal Society. International Exchanges Scheme. PI: Kashtalyan, Maria (University of Aberdeen) / Mantič, Vladislav (Universidad de Sevilla). 2015-2018. 12.000,00 GBP.
8. MAT2012-37387. Caracterización y medida de las propiedades de la interfase en materiales compuestos mediante ensayos de fibra única usando enfoques no clásicos de la Mecánica de la Fractura. Ministerio de Economía y Competitividad. PI: Mantič, Vladislav (Universidad de Sevilla). 1/1/2013-31/12/2015. 70.200,00 EUR
9. P08-TEP-04051. Estudio de inicio y propagación de daño en materiales compuestos a escala micro y meso mediante desarrollo y aplicación de la mecánica de la fractura finita. Junta de Andalucía. PI: Mantič, Vladislav (Universidad de Sevilla). 13/1/2009-31/12/2013. 269.923,68 EUR.