

Paulo M. S. T. de Castro
Report 2019

Papers

- Sérgio A. G. Pereira, Sérgio M. O. Tavares, Paulo M.S.T. de Castro, ‘Mixed mode fracture: numerical evaluation and experimental validation using PMMA specimens’, *Frattura ed Integrità Strutturale*, vol.49, pp.412-428, 2019
- Sérgio M. O. Tavares, Luís G. Reis, Manuel de Freitas, Paulo M. S. T. de Castro, ‘Mixed mode fatigue and fracture in planar geometries: observations on K_{eq} and crack path modelling’, *Fatigue and Fracture of Engineering Materials and Structures*, vol.42, pp. 2441–2456, 2019
- J. B. Marques, S. M. O. Tavares, P. M. S. T. de Castro, ‘Analysis of mode II and mixed mode I-II in fracture and fatigue: A numerical and experimental study’, in: L. F. M. da Silva, ed., ‘Materials Design and Applications II’, (Advanced Structured Materials, vol.98), Springer, pp. 403-423, 2019
- E. Shahabi, P. M. S. T. de Castro, ‘Analysis of the semi-circular bend (SCB) specimen: Finite element method determination of t -stress, K_I and K_{II} ’, in: L. F. M. da Silva, ed., ‘Materials Design and Applications II’, (Advanced Structured Materials, vol.98), pp. 387-402, 2019

(letter to the editor)

- Luís Reis, Manuel de Freitas, Paulo M. S. T. de Castro, ‘Guest editorial: Special issue—New trends in fatigue and fracture (NT2F18)’, *Fatigue and Fracture of Engineering Materials and Structures*, vol.42, 11, p. 2413.

Conference presentations

- Paulo A. da C. Sousa, Paulo M. S. T. de Castro, ‘Remarks on specific sliding and Hertzian contact on spur gears’, abstract #16711 submitted for possible presentation at Encontro Investigação Jovem, 13^a edição, Reitoria da Universidade do Porto, Feb. 12-14, 2020 <https://ijup.up.pt/2020/>
- R. Martim Salgado, Paulo M. S. T. de Castro, ‘Specified values of addendum thickness in spur gears’ teeth: relationship with profile shift x ’, abstract #16662 submitted for possible presentation at Encontro Investigação Jovem, 13^a edição, Reitoria da Universidade do Porto, Feb. 12-14, 2020 <https://ijup.up.pt/2020/>

Theses supervision

- Filipe Alexandre Couto da Silva, ‘Desenvolvimento de máquinas para automação e logística industrial: Relatório de percurso profissional - 2013 a 2018’, tese mestrado MIEM, 29 Jan. 2019

- Ana Francisca Carvalho Alves, ‘Automatização do set-up de um sistema de corte’, orientador na FEUP: Prof. Paulo Tavares de Castro, co-orientador na FEUP: Prof. Fernando Gomes de Almeida; orientador na Empresa: Eng. Alberto Pereira, tese mestrado MIEM, Jul. 2019
- Ana Margarida Gomes, ‘Comando manual rotativo de alta tensão’, orientador: Professor Paulo Manuel Salgado Tavares de Castro; co-orientador: Professor Doutor Luís António de Andrade Ferreira; orientador na empresa: Engenheiro Filipe Rocha, tese mestrado MIEM, Jul. 2019
- Daniel Franco Gomes, ‘Simulador de Realidade Virtual – Arvorismo’, orientador na FEUP: Prof. Paulo Tavares de Castro; orientador na empresa: Eng. Filipe Matias, tese mestrado MIEM, Jul. 2019
- Eduardo Sousa Ribeiro, ‘Road pavement energy harvesting solution based on a hydraulic system with mechanical actuation’, orientador na empresa: Doutor Francisco Duarte (PAVNEXT); orientador na FEUP: Prof. Paulo Tavares de Castro, tese mestrado MIEM, Jul. 2019
- João Pedro Mendes Maciel, ‘Projeto de um equipamento para aplicação de etiquetas de eficiência energética na superfície de um pneu’, orientador na FEUP: Professor Paulo Manuel Salgado Tavares de Castro; orientador da empresa: Eng. Rui Manuel Fazenda da Silva, tese mestrado MIEM, Jul. 2019
- Marta Oliveira Ramos, ‘Gestão operacional da metodologia SMED’, orientador na FEUP: Prof. Paulo Tavares de Castro; co-orientador na FEUP: Prof. José António Barros Basto; orientador na empresa: Eng. Celso Maia, tese mestrado MIEM, Jul. 2019
- Miguel Brás Ribeiro, ‘Mitigação de ruído em transformadores de potência recorrendo a absorvedores’, orientador: Doutor Sérgio Manuel Oliveira Tavares; co-orientador: Professor Paulo Manuel Salgado Tavares de Castro, tese mestrado MIEM, Jul. 2019
- Rui Filipe da Silva Oliveira, ‘Desenvolvimento de projeto e fabrico de engrenagens de precisão em polímeros’, orientadores: Doutor Carlos Fernandes (INEGI / CETRIB), Professor Paulo Tavares de Castro (FEUP), Engenheiro João Cortez (Celoplás), tese mestrado MIEM, Jul. 2019

Other

- Forward, for the book by S. Pastrama ‘Strength of Materials 2’¹, 7 Jan 2019

¹ S. D. Pastrama, ‘Strength of Materials 2’, MATRIX ROM, Bucuresti 2019, ISBN: 978-606-25-0502-8

Consultancy for companies ²

- L. A. Ferreira, P. M. S. T. de Castro, ‘Avaria de rodado do comboio Alfa 133 em 11 de Setembro de 2018’, relatório CSF, FEUP, 06.03.2019
 - L. A. Ferreira, P. M. S. T. de Castro, visit to EMEF Entroncamento, Jan. 21, 2019 and meeting with Eng. Helder Neto *et al.*.
- J. L. Esteves, P. M. S. T. de Castro, discussion at ADIRA, June 18, 2019
 - M. Figueiredo, follow up, Oct 9, 2019
- P. M. S. T. de Castro, ‘Rupture of the toothed crown / kiln connection at the Avelar expanded clay factory of Leca Saint Gobain’, December 31, 2019 ³

Elections

- P. M. S. T. de Castro, Member of the Council of the Department of Mech. Engng. of FEUP (Conselho do Departamento), Feb. 1, 2019
- P. M. S. T. de Castro, Member of Scientific Council (Conselho Científico) of FEUP, Feb. 21, 2019

Academic juries and theses examination

- Concurso para admissão de Professor Adjunto *Área Científica de Engenharia Mecânica – Grupo disciplinar de Projeto de Construções Mecânicas e Órgãos de Maquinas – PREVPAP*, ISEP, Oct. 14, 2019
- Processo de recrutamento Contratação de Pessoal (646), Contrato Individual de Trabalho por tempo indeterminado para docentes para 1 vaga de Professor Auxiliar, Departamento de Engenharia Mecânica, FEUP; 1^a reunião em 13 Dez. 2019
- *Agregação*,
 - Dulce Rodrigues, Universidade de Coimbra, 19-20 Sept 2019
- Doctoral degree,
 - Yan Dong, IST, Universidade de Lisboa, July 23, 2019
 - Henrique Soares, IST, Universidade de Lisboa, Dec. 16, 2019
- MIEM (integrated master in Mech. Engng.), FEUP
 - Filipe Alexandre Couto da Silva, 29 Jan. 2019
 - João Alberto Epalanga, 13 Feb. 2019
 - Ilaria Cerrone, 26 Feb. 2019
 - Marco António Cró Freitas, 15 Mar. 2019
 - Lúcia Moura, 26 Mar. 2019
 - Andreia Santos, 9 July 2019

² and preparation of an offer of consultancy services for STCP, with Prof. A. A. Fernandes.

³ rev Jan. 2, 2020.

- Ana Margarida Antunes, 10 July 2019
 - João Maciel, 15 July 2019
 - Eduardo Ribeiro, 15 July 2019
 - Francisca Alves, 15 July 2019
 - Daniel Gomes, 15 July 2019
 - Justino Cruz, 16 July 2019
 - Mauro Domingues, 16 July 2019
 - João Boavida Barroso, 16 July 2019
 - Sara Baía Santos, 18 July 2019
 - José Vieira, 18 July 2019
 - António Carneiro, 18 July 2019
 - Pedro Lima, 18 July 2019
 - Catarina Borges, 19 July 2019
 - Nelson Silva, 19 July 2019
 - Patrick Soares, 19 July 2019
 - António Baptista, 14 July 2019
- MSc in Mechanical Engineering, ISEP
 - Rafael Tiago Ferraz de Azevedo, 8 Nov. 2019

Event organization

- seminar on ball bearings, Ferran Perez, Schaeffler; promoted by JUNCOR and Schaeffler, FEUP, March 27, 2019
- seminar on belt transmissions, Jordi Vazquez (OPTIBELT) and Miguel S. Fernandes (JUNCOR), at FEUP / INEGI April 11, 2019
- ‘Projecto Mecânico e Empresas – Casos de Estudo’⁴ FEUP, DEMec, sala L118, 13h30–16h30, May 17, 2019
- seminar at FEUP, ‘Experimental cohesive law identification of adhesive layers subject to shear load: some recent results’, by Gabriele Cricri (Università degli Studi di Napoli “Frederico II”) and Michele Perrella (Università degli Studi di Salerno), July 10, 2019
- seminar at FEUP, ‘Air transport system – a short overview’, by Dieter Schmitt (member, Scientific Committee EU program Clean Sky 2); Dec. 10, 2019

Evaluations

- Fulbright Student Program, evaluation of one application, March 4, 2019
- Evaluator of 2 PhD theses for the Clean Sky PhD Award 2019, (Award ceremony at Aerodays 2019, Bucharest, May 22, 2019).
 - webex meeting, April 25, 2019

⁴ Workshop consisting on presentations by 10 students preparing their master theses in companies.

Service

- EASN
 - WebEx participation in 1st NCP⁵ meeting in Barcelona, Spain, 1 Feb 2019
- Clean Sky 2
 - Next Framework Programme Technology Roadmap Workshop II, Clean Sky Joint Undertaking Offices, Brussels, Jan. 24, 2019
 - Sci Com meeting #1, Jan. 25, 2019
 - Sci Com meeting #2, Feb. 28, 2019
 - Sci Com webex, May 8, 2019
 - Sci Com meeting #4⁶, July 2, 2019
 - Sci Com webex, CfP11 Call text, Sept. 24, 2019
 - SciCom meeting #5, Oct. 10, 2019
 - SciCom meeting #6, Nov.28, 2019
- Comissão Museu da FEUP, em representação do DEMec FEUP, Jan 2019 - ...; email de Direção FEUP de 24-1-2019
- July 2019, became Editorial Board Member in the journal *Applied Sciences* (MDPI)

Distinction

P. M. S. T. de Castro, Outstanding Reviewer for *International Journal of Structural Integrity* in the 2019 Emerald Literati Awards. (EMERALD email of August 9, 2019)

Conferences' committees

P. M. S. T. de Castro,

- member of scientific committee, Symposium on Mechanical Engineering, 3rd Doctoral Congress Engineering - DCE19, FEUP, Porto, Portugal June 27-28, 2019; <https://paginas.fe.up.pt/~dce/2019/>; <https://paginas.fe.up.pt/~dce/2019/symposia/symposium-on-mechanical-engineering/>
- member of scientific committee First International Symposium on Risk Analysis and Safety of Complex Structures and Components – IRAS19; FEUP, Porto, Portugal, July 1-2, 2019
- member of scientific editorial committee of the 23rd international scientific conference Transport Means 2019, October 2-4, 2019 in Hotel Gabija, Palanga, Lithuania; (session 'Waterborne Transport' October 4 in Klaipėda University, Lithuania); <https://transportmeans.ktu.edu/>
- member of scientific committee, 19th International Conference on New Trends in Fatigue and Fracture - NT2F19, Tucson, Arizona, USA, October 8-10, 2019; <http://nt2f19.usacm.org/>
- member of scientific committee, 5th Iberian Conference on Structural Integrity - IbCSI 2020, Coimbra, Portugal, March 25-27, 2020; <https://ibcsi.pt/>
- member of scientific committee, 3rd International Conference on Materials Design and Applications 2020, FEUP, June 25-26, 2020; <https://web.fe.up.pt/~mda2020/>
- member of international scientific committee 10th EASN International Conference on "Innovation in Aviation & Space to the Satisfaction of the European Citizens", Salerno, Italy 2-5 September, 2020
- member of international advisory scientific committee, 20th International Colloquium on Mechanical Fatigue of Metals, September 2-4, 2020 Wrocław, Poland; <http://icmfmx.pwr.edu.pl/>
- member of scientific committee, 12º Congresso Nacional de Mecânica Experimental (CNME 2020), Palace Hotel Monte Real, Leiria, Portugal, 7-9 de Outubro de 2020 <http://www.cnme2020.ipleiria.pt/index.html>

⁵ NCP – national contact point.

⁶ missed SciCom #3 meeting, due to the change of his date from the initial schedule of 25th April to 29th April.

Some visitors

- Mr. Ferran Perez, Schaeffler, March 27, 2019
- Mr. Jordi Vazquez, OPTIBELT, April 11, 2019
- Eng. Ângelo Oliveira, STCP, May 8, 2019⁷
- Eng. Carlos Abreu, STCP, May 8, 2019
- Prof. J. M. Mallikarjuna, Department of Mechanical Engineering, Indian Institute of Technology Madras – IITM, May 31, 2019.
- Prof. Valentina Haralanova Depart Mech Engng, Linnaeus University, Sweden, June 27, 2019
- Dr. Gabriele Cricri, Università degli Studi di Napoli ‘Frederico II’, July 10-11, 2019
- Dr. Michele Perrella, Università degli Studi di Salerno, July 10-11, 2019
- Eng. Tiago Vidinha, July 17, 2019
- Prof. Paulo Russi de Carvalho, Instituto Federal de Educação. Ciência e Tecnologia de São Paulo, Campus Piracicaba, Brasil, Dec. 2, 2019
- Eng. Pedro Pinto, Fibersail, Dec. 3, 2019
- Dr Dieter Schmitt, member of Clean Sky 2 Sci. Com., Dec. 9-10, 2019
- Eng. Tiago Lima, Dec. 20, 2019

Other

- Attendance of
 - AEROCAR workshop: Transfer of composite manufacturing technologies between the automotive and aeronautic sectors, Feb. 6, 2018 www.interreg-sudoe.eu
 - Workshop do programa doutoral iRail - Innovation in railway systems and technologies <https://web.fe.up.pt/~irail/> , 15 de Fevereiro de 2019, FEUP.
- Intervenção, com Jorge Custódio, na apresentação do livro de Lewis Mumford “Técnica e Civilização” publicado pela editora Antígona com tradução por Fernanda Barão e Isabel Fernandes com apoio científico de Jorge Custódio; 3 Abr 2019, sala de exposições da Biblioteca FEUP.
- 1º vogal suplente, bolsa de pós doutoramento, projeto “IAMAT – Introdução de Tecnologias Baseadas em Materiais Avançados nas Indústrias da Mobilidade”, MITP-TB/PFM/0005/2013, Maio de 2019

⁷ and preparation of an offer of consultancy services, with Prof. A. A. Fernandes.