RICCARDO LICCIARDELLO
Curriculum Vitae ai fini della pubblicazione

Place **Roma**
Date **14th November 2019**

Part I – General Information

Full Name	Riccardo, Valentino, LICCIARDELLO

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
National Scientific Habilitation	2019	ANVUR Italian National Agency for the Evaluation of Universities and Research Institutes	National Scientific Habilitation (ASN), habilitation for permament position of associate professor
Other	2006	Alstom	Course on "Developing Intercultural Effectiveness" for the management of multi-cultural working groups
PhD	2002	Universita' degli Studi di Roma "La Sapienza"	Railway Engineering, 15th cycle, thesis title "On track measurement of wheel/rail interaction parameters for research purposes. Experimental identification of the fundamental parameters of the theoretical simulation models", involving measurement system design, implementation and tests on a metro line.
Habilitation engineering profession	1998	Ordine degli Ingegneri della Provincia di Roma (professional order of engineers, Rome)	Habilitation for the engineering profession, 15/07/1998
University graduation	1998	Universita' degli Studi di Roma "La Sapienza"	Master's degree in mechanical engineering, 110/110 with honours, 06/03/1998

Part III – Appointments

IIIA – Academic Appointments

20 years continuous research experience within the scientific discipline "transport" ICAR/05, characterised by high involvement in international research groups, collaboration with several different senior colleagues, and work with immediate impacts on the rail sector.

Start	End	Institution	Position
2018	-	Universita' degli Studi di Roma "La Sapienza"	Head of the Vehicle and Transport Systems Laboratory (Responsabile scientifico del Laboratorio di Veicoli e Sistemi di Trasporto).
2018	2021	Universita' degli Studi di Roma "La Sapienza"	Contract researcher and lecturer (Ricercatore a tempo determinato tipologia A L. 240/2010).
2013	2018	Universita' degli Studi di Roma "La Sapienza"	Research fellow (assegnista di ricerca), 5 annual contracts, supervisor Prof. S. Ricci.
2010	2013	Universita' degli Studi di Roma "La Sapienza"	Contract researcher and lecturer (Ricercatore a tempo determinato L. 230/2005).
2008	2010	Universita' degli Studi di Roma "La Sapienza"	Research fellow (assegnista di ricerca), 1 biennial contract, supervisor Prof. G. Malavasi.
2003	2007	Universita' degli Studi di Roma "La Sapienza"	Research fellow (assegnista di ricerca), 2 biennial contracts, supervisors Prof. G.R. Corazza, Prof. G. Malavasi.
2004	-	Universita' degli Studi di Roma "La Sapienza"	SAPIENZA key person for Pole 3 "rolling stock" and Pole 8 "infrastructure and signalling" of the EURNEX network of excellence.
1999	2002	Universita' degli Studi di Roma "La Sapienza"	Doctoral student, supervisor Prof. G.R. Corazza.
1999	1999	Universita' degli Studi di Roma "La Sapienza"	Research collaborator, supervisor Prof. G.R. Corazza.

IIIB – Other Appointments

Active in SAPIENZA University spin-off company DITS Development and Innovation in Transport Systems S.r.l. as founding partner, technical director then quality assurance manager, 2011 to today. Consultant for the transport Ministry and the judiciary system (2004 to 2011). Professional engineer (2002 to 2011). Research fellow collaborating with several senior colleagues in services supplied by SAPIENZA to its customers, and leading to scientific publications (2007 to 2018).

Start	End	Institution	Position
2016	-	DITS Development and Innovation in Transport Systems S.r.l.	Quality Assurance Manager (ISO 9001 certification).
2012	2016	DITS Development and Innovation in Transport Systems S.r.l.	Technical Director.
2017	2018	Universita' degli Studi di Roma "La Sapienza" for Almaviva S.p.A.	Expert in railway systems, as research fellow and researcher, n. 1 contract, MOP Mobility Operations Platform, led by Prof. L. Persia, publication under peer review.
2016	2016	Universita' degli Studi di Roma "La Sapienza"	In charge of technical coordination of research bid NEEDS2RAIL for SHIFT2RAIL (rail sector needs to 2050), 7 European Partners, total score 11.50 (threshold 10).
2016	2016	Universita' degli Studi di Roma "La Sapienza"	In charge of technical coordination of research bid NOISYS for SHIFT2RAIL (railway noise), 12 European Partners, total score 11.50 (threshold 10), publication n. 2.
2014	2015	Universita' degli Studi di Roma "La Sapienza" for Esercizio Raccordi Ferroviari S.p.A.	Expert in railway systems, as research fellow, n. 1 contract, track geometry requirements for private sidings, led by Prof. G. Malavasi, publication n. 5.
2011	2011	Tribunale di Lucca	Technical advisor to the judge for the preliminary inquiry on the tragic Viareggio railway accident of June 2009.
2008	2011	Italian Transport Ministry (Ministero delle Infrastrutture e dei Trasporti, Dipartimento per i trasporti terrestri, Direzione Generale del Trasporto Ferroviario)	Expert in railway systems. Comparison of the Italian and European regulatory framework for dangerous goods transport by rail (independent consultant). Train driver directive (independent consultant). Health and safety regulations for railway workplaces (independent consultant).

2004	2006	Italian Transport Ministry (Ministero delle Infrastrutture e dei Trasporti, Dipartimento per i trasporti terrestri, Direzione Generale del Trasporto Ferroviario)	Expert in railway systems Revision of operational safety regulations for the new Italian high-speed lines (lead: Prof. G. Malavasi). Analysis of documentation on train derailments in Italy (lead Prof. G.R. Corazza). Proposal for a general revision of the regulations for railway operational safety (lead Prof. E. Borgia).
2007	2014	Universita' degli Studi di Roma "La Sapienza" for PriceWaterhouse Coopers in providing services to the European Commission	Expert in railway systems, as research fellow and researcher, n. 4 contracts, Single Wagon Load transport, rail safety, rail access legislation, rail noise abatement, led by Prof. G. Fusco / A. Musso, publications n. 4 and 6.
2007	2007	Universita' degli Studi di Roma "La Sapienza"	SAPIENZA contact person for participation in bid "CertiTRAIN" for EU FP7.
2004	2006	Universita' degli Studi di Roma "La Sapienza"	Collaboration as research fellow to national research project (PRIN) on the development and application of integrated measurement systems to interpret experimentally the behaviour of a railway vehicle in its interaction with the track, led by Prof. G. Santucci, see references in publication n. 12.
2002	2011	Self-employed	Professional engineer.
2000	2006	Universita' degli Studi di Roma "La Sapienza" for Alstom Ferroviaria S.p.A.	Scientific collaborator, expert in instrumented wheelsets, as research collaborator and research fellow, n. 3 contracts, Prof. G.R. Corazza, several publications, see references in publication n. 12.
1998	2000	Universita' degli Studi di Roma "La Sapienza" for Fiat Ferroviaria S.p.A.	Scientific collaborator, expert in instrumented wheelsets, as research collaborator, n. 2 contracts, Prof. G.R. Corazza, several publications, see references in publication n. 12.
1998	1998	Fiat Ferroviaria S.p.A.	Scientific collaborator, expert in instrumented wheelsets.

Part IV – Teaching experience

Continuous 20-year academic teaching experience in two Universities, 10 of which in charge of ICAR/05 university courses (contract lecturer or entrusted by the faculty), including course design, lecturing, technical visits, exams. Active in international student exchange. Faculty member (membro del Consiglio d'Area) for 11 years. Supervisor (relatore) of 9 theses since 2011 (risk analysis and safety for rail transport, publication n. 11; health and safety in railway workplaces; tramways – infrastructure and vehicle use, dynamics, electric traction; safety of long freight trains; impacts of rail vehicle innovations). Co-supervisor (correlatore) of 19 theses (tramway vehicle track interaction and impacts; impacts of rail vehicle innovations). Lecturer in professional training courses for rail-sector staff (several editions of courses for train drivers, courses for candidates to railway safety management positions in railway companies, and others).

Year	Institution	Lecture/Course
2018/2019 2019/2020	Universita' degli Studi di Roma "La Sapienza"	Railway Engineering, faculty lecturer (incarico didattico).
2018/2019 2019/2020	Università degli Studi di Roma "La Sapienza"	Tecnica, economia e politica dei trasporti (Transport sciences, economy and policy), faculty lecturer (incarico didattico).
2017-2019	For.Fer. S.r.l.	Transport sciences for train driver position applicants.
2016-2019	DITS S.r.l.	Course for railway companies (infrastructure manager RFI S.p.A., railway undertakings Trenitalia S.p.A.) on the role of the Head of the Safety Management System required by the EU Safety Directive, lectures on: railway regulatory framework, safety roles and responsibilities of rail-sector players, Technical Specifications for Interoperability, placing in service of railway vehicles. Several editions.
2017	DITS S.r.l.	Course for Mer.Mec. S.p.A. on wayside measurement of loads due to passing railway vehicles.
2012-2018	Università degli Studi di Roma "La Sapienza"	Railway Engineering, Tecnica ed economia dei trasporti, (Transport Sciences and Economy), Sicurezza dei trasporti (Transport Safety), assistance in lectures and exams.
2010/2011	Università degli Studi di Roma "La Sapienza"	Sicurezza dei trasporti (Transport safety), contract lecturer (professore a contratto).
2009/2010	Università degli Studi di Roma "La Sapienza"	Tecnica ed economia dei trasporti (Transport sciences and economy), contract lecturer (professore a contratto).
2004/2005 2005/2006 2006/2007 2007/2008 2008/2009	Università degli Studi di Roma "La Sapienza"	Dinamica dei veicoli (Vehicle Dynamics), contract lecturer (professore a contratto).

2006	Università degli Studi di Roma "La Sapienza"	Master IISF, in Ingegneria delle Infrastrutture e dei Sistemi Ferroviari (director Prof G. Malavasi), vehicle management and dynamics (dinamica e gestione dei veicoli).
2006	Università degli Studi di Roma "La Sapienza" for CIITI Consorzio Italiano Infrastrutture e Trasporti per l'Iraq	Training service for Iraqi technicians within the programme "training on Transport Planning" (lead Prof. G. Malavasi).
2003/2004 2004/2005 2005/2006 2006/2007 2007/2008 2008/2009	Universita' degli Studi di Firenze	Tecnica ed economia dei trasporti (Transport sciences and economy), contract lecturer (professore a contratto).
1999/2000 2000/2001 2001/2002 2002/2003 2003/2004 2004/2005 2005/2006	Università degli Studi di Roma "La Sapienza"	Sistemi di trazione (traction Systems) assistance in lectures and exams.

Part V - Society memberships, Awards and Honours

Year	Title
2018	Member of the doctoral committee, infrastructure and transport (Collegio di Dottorato in Infrastrutture e Trasporti)
2018	Member of the editorial board of the Journal of Rail and Rapid Transit
2015	William Alexander Agnew Meritorious Award / Clarence Noel Goodall Award, for merits in the field of railway engineering. Publications n. 9, 10.
2015	Expert of railway sciences and regulations (Esperto in materia di tecnica e normativa ferroviaria), DIGIFEMA National Investigation Body.
2013	Best article 2011 prize, journal Ingegneria Ferroviaria, publication n. 12.
2006	SIDT Società Italiana Docenti Trasporti
1999	Prize "Mallegori", paper G. CORAZZA, R. LICCIARDELLO, G. MALAVASI, M. MARCONE (1999). La ruota come sensore di interazione ruota-rotaia. INGEGNERIA FERROVIARIA, vol. 3, p. 119-131, ISSN: 0020-0956.
1998	CIFI Collegio Ingegneri Ferroviari Italiani (Board of Italian Railway Engineers), 1998-2008

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Participated as investigator in the following European projects (n. 1 to 7), principal investigator for project n. 8. Active in different phases of the projects as indicated in the table: launching the idea (I), securing funding (F), designing SAPIENZA participation through the description of work (D), leading work packages/workstreams (L), participating in the scientific work (P), financial reporting (R), in charge of funds ("responsabile scientifico) for SAPIENZA (C). Secured funds (F) for a total grant value of approx. 590 k€ from 2009 to 2018 (projects 1, 2, 3, 6, 8).

Year	Title	Program	Grant value
2018	8. S2R-PantOCL Pantograph – Overhead Contact Line Interaction – Dynamic Behaviour and Quality of the Current Collection (F,D,L,P,R,C)	SHIFT2RAIL	39.2 k€
2017	7. OptiYard Optimised real-time yard and network management (L,P,R)	SHIFT2RAIL	148.0 k€
2017	6. RUN2Rail Innovative running gear solutions for new dependable, sustainable, intelligent and comfortable rail vehicles (F,D,L,P,R)	SHIFT2RAIL	195.8 k€
2016	5. VITE Virtualisation of the test environment for ERTMS/ETCS (P,R)	SHIFT2RAIL	81.8 k€
2015	4. IN2Rail Innovative Intelligent Rail (P,R)	Horizon 2020	69.9 k€
2009	3. PantoTRAIN Total regulatory acceptance for the interoperable network, pantograph-catenary interaction – TrioTRAIN project cluster (I,F,D,L,P,R)	EU FP7	78.8 k€
2009	2. DynoTRAIN Total regulatory acceptance for the interoperable network, running dynamics – TrioTRAIN project cluster (I,F,D,L,P,R)	EU FP7	182.7 k€
2009	1. AeroTRAIN Total regulatory acceptance for the interoperable network, aerodynamics – TrioTRAIN project cluster (I,F,D,L,P,R)	EU FP7	92.7 k€

Part VII – Research Activities

Research mainly aimed at generating immediate impacts on rail transport through international cooperation with academia, industry and regulatory/standardisation bodies, in a view to contribute to modal shift towards the safe and environmentally friendly rail transport mode.

Keywords	Brief description
Placing in service of railway subsystems	Scientific methodology to improve limit criteria for physical and virtual testing. Topics: aerodynamics, running dynamics, pantograph-catenary interaction, Control-Command and Signalling, innovative running gear, risk-based approaches. Tailoring research outputs for more immediate impacts on regulatory and standardisation bodies → high-safety lower-cost railways. Publications n. 1, 7, 8, 9, 10 and on-going projects.
Rail freight transport	Transport policy and operations, conceptualisation of decision support systems in order to have practical and rapid impact on the EU market → higher competitiveness of rail freight. Publications n. 4, 6 and on-going projects.
Vehicle track interaction: impacts, theory and experiment	Virtual methods for certification/placing-in-service; experimental methods (e.g. instrumented wheelsets) for research purposes, model validation and for support to placing in service → high-safety more attractive lower-cost railways, Publications n. 1, 2, 3, 5, 11 and on-going projects.

Part VIII – Summary of Scientific Achievements

Reference letters describing scientific achievements

- CEN (European Committee for Standardization) – impacts on regulation and standardisation
- Kungliga Tekniska Högskolan (Royal Institute of Technology), Stockholm, Sweden - scientific and regulatory impacts
- UNIFE The European Rail Industry – impacts on railway business
- University of Birmingham, United Kingdom – scientific and regulatory impacts
- University of Huddersfield, United Kingdom – scientific and regulatory impacts

Scientific achievements reported in EU research deliverables

- OptiYard Optimised Real-time Yard and Network Management
  - D3.1 Definition of suitable simulation environment (2018) - deliverable leader, main contributor
  - D 4.1 Yard and Network Simulation Model (2018) - deliverable leader, main contributor
  - D4.3 Validated models and simulator (2019) - deliverable leader, revisor
- RUN2Rail Innovative running gear solutions for new dependable, sustainable, intelligent and comfortable rail vehicles
  - D5.6 Report on RUN2Rail Targeted Impacts (2017) - deliverable leader, main contributor
  - D1.3 Description and assessment of methods for condition monitoring (2019) - contribution of a chapter on in-service wheel load measurement
  - D1.4 Technology concepts for condition monitoring and their final assessment (2019) - deliverable leader, main contributor
  - D2.4 Assessment of the potential benefits of novel materials (2019) - deliverable leader, main contributor

- o D3.4 Impact assessment for active suspensions and steering (2019) - deliverable leader, main contributor
- o D5.7 RUN2Rail Assessment results and impacts, including direct R&S impacts (currently under "Technical Management Team" review) - deliverable leader, main contributor
- VITE Virtualisation of the test environment for ERTMS/ETCS
  - o D2.2 Test process framework (2018) – contribution of chapters and appendix on test accuracy framework
  - o Report: Test Accuracy Methodology applied to VITE test results (2018) - key contributor
- IN2RAIL Innovative Intelligent Rail
  - o D5.1 Report on parameters influencing concept developments (2015) - review
  - o D5.3 Methodology for thermal stress monitoring (2017) – contribution of a chapter describing risk-based decision model
- AeroTRAIN Total regulatory acceptance for the interoperable network, aerodynamics
  - o D6.1 Report on uncertainty analysis, Parts 1 and 2 (2012) - deliverable leader, main contributor
  - o D6.3 Proposals for integrations to existing standards and homologation processes and their assessment for safety, quality and practical feasibility, Parts 1 and 2 (2012) - deliverable leader, main contributor
- DynoTRAIN Total regulatory acceptance for the interoperable network, running dynamics
  - o D7.1 Report on uncertainty analysis (2013) - deliverable leader, main contributor
  - o D7.3 Proposals for integrations to existing standards and homologation processes and their assessment for safety, quality and practical feasibility (2013) - deliverable leader, main contributor
- PantoTRAIN Total regulatory acceptance for the interoperable network, pantograph-catenary interaction
  - o D6.1 Report on uncertainty analysis (2012) - deliverable leader, main contributor
  - o D6.3 Proposals for integrations to existing standards and homologation processes and their assessment for safety, quality and practical feasibility (2012) - deliverable leader, main contributor

Achievements and research impacts detectable through journal metrics

Product type	Number	Data Base	Start	End
Papers [international]	12	Scopus	2009	2019
Books [scientific]	1	CINECA	2005	2005
All publications	39	CINECA	1999	2019

Total Citations	93
Average Citations per product	7.75
Hirsch (H) index	4
Total Impact factor (Scopus, field-weighted citation impact)	13.58
Average impact factor per product (field-weighted citation impact)	1.13

Scopus consulted 14/11/2019; period 2009-2019

Recent work presented at conferences and/or in press

- Licciardello R., Pellegrini P., Deleplanque S., Hosteins P., Adamko N., Zaťko M., Liu R., Wahlborg M., Peterson A. (accepted for publication). OptiYard Integrating yard, network and optimisation models towards real-time optimisation of rail freight yard operations. Ingegneria Ferroviaria. (OptiYard project).
- Martin Jarillo J., Moreno Garcia-Loygorri J., Alfi S., Barcet S., Bouvet P., Bruni S., Cervello, S., Costa B., Licciardello R. (under peer review). Architecture for an on-board condition-based monitoring system for the running gear of railway vehicles: Run2Rail vision. Journal of Rail and Rapid Transit. (RUN2Rail project).
- Velletrani F., Licciardello R. (accepted for publication). Intelligent wheelsets for the trains of the future: the role of in-service wheel-rail force measurement. Ingegneria Ferroviaria. (RUN2Rail project).
- Carroccia R., Campagna A., Licciardello R., Persia L., Borasio M., Maritano L., Raffone A. (under peer review). Towards a conceptual data model for Freight Transport Services in a LaaS logic. IET Intelligent Transport Systems. (MOP project).
- Goodall R., Licciardello R., Stichel S., Hughes P., (2019). An Integrated, Systems-Based Approach to Authorisation of Actively-Controlled Running Dynamics, Proceedings of the World Congress on Railway Research WCRR 2019. (RUN2Rail project).
- Licciardello R., Malavasi G., Rizzetto L., (2019). Integrating on-board authorisation measurements with in-service measurements and risk assessment towards more effective running dynamics approval. Proceedings of the World Congress on Railway Research WCRR 2019. (Vehicle-track interaction).
- Molina D., Iglesias J., Domínguez S., Licciardello R., Sierra B. (2018). Virtualisation of the test environment for signalling. Proceedings of 7th Transport Research Arena TRA 2018, April 16-19, 2018, Vienna, Austria. Vienna, Austria, doi: 0.5281/zenodo.1451539, VITE project.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

N.	Reference	N. of citations, journal impact factor, (as of 13/11/2019)
1.	Licciardello R., Funfschilling C., Malavasi G. (2017). Accuracy of the experimental assessment of running dynamics characteristics quantified through an uncertainty framework. Proceedings of the Institution of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit, vol. 231, p. 945-960, ISSN: 0954-4097, doi: 10.1177/0954409716657373	Citations: 0 IF (SJR): 0.654 (2018) CiteScore: 1.99 (2018)
2.	Zvolensky, P., Grencik, J., Kasiar L., Volna P., Licciardello R. (2017). Modelling and experimental analysis of noise transmission through wall of a railway vehicle. Komunikacie, vol. 19, p. 60-67, ISSN: 1335-4205	Citations: 3 IF (SJR): 0.488 (2018)
3.	Licciardello R., Malavasi G., Ricci S., Vitali P. (2017). Wear rates in urban rail systems. In: WIT Transactions on The Built Environment. vol. 176, p. 291-301, SOUTHAMPTON: WIT Press, ISBN: 978-1-78466-209-7	Citations: 1 IF (SJR): 0.117 (2018) CiteScore: 0.16
4.	Guglielminetti P., Piccioni C., Fusco G., Licciardello R., Musso A. (2017). Rail Freight Network in Europe: Opportunities Provided by Re-launching the Single Wagonload System. Transportation Research Procedia, 25, 5185-5204.	Citations: 2 IF (SJR): 0.601 (2018) CiteScore: 1.31 (2018)

5. Licciardello R., Malavasi G., Tieri A., Vitali P. (2016). Reference values for railway sidings track geometry. Transportation Research Procedia, 14, 1996-2005.

Citations: 1
IF (SJR): 0.601 (2018)
CiteScore: 1.31 (2018)

6. Guglieminetti P., Piccioni C., Fusco G., Licciardello R., Musso A. (2015). Traffico merci a carro singolo in Europa. Sfide, prospettive e opzioni politiche. Ingegneria Ferroviaria, vol. LXX, p. 927-948, ISSN: 0020-0956

Citations: 3
IF (SJR): 0.239 (2018)
CiteScore: 0.31 (2018)

7. Licciardello R., Grappein E., Rueter A. (2015). On the accuracy of the assessment of open-air pressure loads due to passing trains: Part 1: Experimental assessment. Proceedings of the Institution of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit, vol. 229, p. 644-656, ISSN: 0954-4097, doi: 10.1177/0954409715577850

Citations: 5
IF (SJR): 0.654 (2018)
CiteScore: 1.99 (2018)

8. Licciardello R., Grappein E., Rueter A. (2015). On the accuracy of the assessment of open-air pressure loads due to passing trains. Part 2: Assessment by simulation. Proceedings of the Institution of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit, vol. 229, p. 657-667, ISSN: 0954-4097, doi: 10.1177/0954409715589396

Citations: 4
IF (SJR): 0.654 (2018)
CiteScore: 1.99 (2018)

9. Baker C.J., Quinn A.D., Hoefener L., Sima M., Licciardello R. (2014). Full-scale measurement and analysis of train slipstreams and wakes. Part 1: Ensemble averages. Proceedings of the Institution of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit, vol. 228, p. 451-467, ISSN: 0954-4097, doi: 10.1177/0954409713485944

Citations: 45
IF (SJR): 0.654 (2018)
CiteScore: 1.99 (2018)

10. Baker C.J., Quinn A.D., Hoefener L., Sima M., Licciardello R. (2014). Full-scale measurement and analysis of train slipstreams and wakes. Part 2 Gust analysis. Proceedings of the Institution of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit, vol. 228, p. 468-480, ISSN: 0954-4097, doi: 10.1177/0954409713488098

Citations: 28
IF (SJR): 0.654 (2018)
CiteScore: 1.99 (2018)

11. Licciardello, R., Baldassarra, A., Vitali, P., Tieri, A., Cruciani, M., & Vasile, A. N. (2013). Limits and opportunities of risk analysis application in railway systems. WIT Transactions on The Built Environment, 134, 133-144.

Citations: 0
IF (SJR): 0.117 (2018)
CiteScore: 0.16

12. Alessandria M., Dotta B., Licciardello R. (2011). Rilievi in linea di lunga durata delle forze di contatto con il metodo CML / Long-term contact force measurements with the CML method. Ingegneria Ferroviaria, vol. 66, p. 929-948, ISSN: 0020-0956

Citations: 2
IF (SJR): 0.239 (2018)
CiteScore: 0.31 (2018)

14/11/2019   *Renato Licciardello* (signature)