**Publications**

Zili Li, 7 Oct., 2016

* **Refereed articles:**

1. Molodova M., Oregui M., Núñez A., Li Z\*. and Rolf Dollevoet (2016), Health Condition Monitoring of Insulated Joints based on Axle Box Acceleration Measurements, Engineering Structures 123 (2016) 225 - 235, DOI: 10.1016/j.engstruct.2016.05.018.
2. Wu J., PetrovR. H., NaeimiM., Li Z., Dollevoet R. and Sietsma J. (2016), Laboratory simulation of martensite formation of white etching layer in rail steel, International Journal of Fatigue 91 (2016) 11 – 20, http://dx.doi.org/10.1016/j.ijfatigue.2016.05.016.
3. Molodova M., Oregui M., Núñez A., Li Z\*[[1]](#footnote-1). and Rolf Dollevoet (2016), Health Condition Monitoring of Insulated Joints based on Axle Box Acceleration Measurements, Engineering Structures, Accepted, DOI: 10.1016/j.engstruct.2016.05.018
4. Zhao X., Li Z., and Dollevoet R. (2016), An approach to determine critical size for rolling contact fatigue initiating from surface defects, International Journal of Rail Technology, http://dx.doi.org/10.1080/23248378.2016.1194775
5. Guillermo Idárraga Alarcón, Nico Burgelman, Juan Meza Meza, Alejandro Toro and Zili Li (2016), Power dissipation modeling in wheel/rail contact: effect of friction coefficient and profile quality, Wear, 10.1016/j.wear.2016.04.026.
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7. Li S., Wu J., Petrov R. H., Li Z.\*, Dollevoet R. and Sietsma S. (2016), “Brown Etching Layer”: A Possible New Insight into the Crack Initiation of Rolling Contact Fatigue in Rail Steels?, Engineering Failure Analysis, doi: 10.1016/j.engfailanal.2016.03.019
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9. Oregui M., Li S., Núñez A., Li Z.\*, Carroll R. and Dollevoet R. (2016), Monitoring bolt tightness of rail joints using Axle Box Acceleration Measurements, Structural Control and Health Monitoring, DOI: 10.1002/stc.1848
10. Oregui M., de Man A., Woldekidan M.F., Li Z.\* and Dollevoet R. (2016), Obtaining railpad properties via dynamic mechanical analysis, Journal of Sound and Vibration 363 (2016) 460 - 472, [doi:10.1016/j.jsv.2015.11.009](http://dx.doi.org/10.1016/j.jsv.2015.11.009)
11. Zhao X. and Li Z. (2016), A solution of transient rolling contact with velocity dependent friction by the explicit finite element method, Accepted for publication in Engineering Computations, Vol. 33, Iss.4.
12. Oregui M., Molodova M., Nunez A., Dollevoet R. and Li Z.\* (2015), Experimental investigation into the condition of insulated joints by impact excitation, Experimental Mechanics, Vol. 55, No. 9, pp. 1597-1612, DOI 10.1007/s11340-015-0048-7 (Open Access).
13. Burgelman N., Sichani M.S., Enblom R., Berg M., Li Z.\* and Dollevoet R. (2015), Influence of Wheel-Rail Contact Modelling on Vehicle Dynamic Simulation, Vehicle System Dynamics. DOI: 10.1080/00423114.2015.1039550.
14. Idárraga Alarcón G., Burgelman N., Meza Meza J., Toro A. and Li Z. (2015), The influence of rail lubrication on energy dissipation in the wheel/rail contact: a comparison of simulation results with field measurements, Wear 330-331 (2015) 533-539, DOI: 10.1016/j.wear.2015.01.008
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**Refereed conference Paper and domestic journal papers:**

1. Jamshidi A., Núñez A., Molodova M., Li Z. and Dollevoet R. (2016), Key performance indicators using robust prediction modelling to consider squats in railway infrastructure, in *Proceedings of the Third International Conference on Railway Technology: Research, Development and Maintenance*, J. Pombo, (Editor), Civil-Comp Press, Stirlingshire, United Kingdom, paper 159, 2016. doi:10.4203/ccp.110.159.
2. NaeimiM., LiZ., DollevoetR., WuJ., PetrovR. H. and Sietsma J. (2016), Thermo-mechanical effects in the formation mechanism of rail squats, in *Proceedings of the Third International Conference on Railway Technology: Research, Development and Maintenance*, J. Pombo, (Editor), Civil-Comp Press, Stirlingshire, United Kingdom, paper 252, 2016. doi:10.4203/ccp.110.252.
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6. Su Z, Núñez A., Jamshidi A., Baldi S, Li Z., Dollevoet R. and De Schutter B., Model Predictive Control for Maintenance Operations Planning of Railway Infrastructures, 6th International Conference on Computational Logistics (ICCL’15), September 22‐25, 2015, Delft.
7. Wei Z., Shen C., Li Z. and Dollevoet R. (2015), Modelling of wheel-rail impact-like interaction at crossing panel, Paper ID # 120, in (Editor: Harry Tournay) the Proceedings of the 10th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (CM2015) (on memory stick), 31 Aug. – 3 Sept., Colorado Springs, Colorado, USA.
8. Guillermo Idárraga Alarcón, Nico Burgelman, Juan Meza Meza, Alejandro Toro and Zili Li (2015), The influence of friction coefficient and wheel/rail profiles on energy dissipation in the wheel/rail contact, Paper ID # 120, in (Editor: Harry Tournay) the Proceedings of the 10th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (CM2015) (on memory stick), 31 Aug. – 3 Sept., Colorado Springs, Colorado, USA.
9. Yang Z., Li Z. and Dollevoet R. (2015), Numerical study on two-point contact by an explicit integration finite element method – A contribution to the modeling of flange squeal, Paper ID # 58, in (Editor: Harry Tournay) the Proceedings of the 10th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (CM2015) (on memory stick), 31 Aug. – 3 Sept., Colorado Springs, Colorado, USA.
10. NaeimiM., Li Z., DollevoetR., Wu J., PetrovR.H. and Sietsma J. (2015), Computation of the flash-temperature at the wheel-rail contact using a 3D finite element model and its comparison with analytical methods, Paper ID # 80, in (Editor: Harry Tournay) the Proceedings of the 10th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (CM2015) (on memory stick), 31 Aug. – 3 Sept., Colorado Springs, Colorado, USA.
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* **Supervised PhD theses as co-promotor[[2]](#footnote-2):**

1. Burgelman N. (2016), The wheel-rail contact problem in vehicle dynamic simulation – Modeling of train-turnout interaction, January 2016, Delft University of Technology.
2. Oregui M. (2015), Vertical railway track dynamics: From measurements to numerical modelling – characteristic frequencies and rail-railpad-sleeper interaction, April, 2015, Delft University of Technology.
3. Molodova M. (2013), Detection of early squats by axle box acceleration, January, 2013, Delft University of Technology.
4. Zhao X. (2012), Dynamic wheel/rail rolling contact at singular defects with application to squats, June, 2012, Delft University of Technology.
5. Dollevoet R. (2010), Design of an anti head check profile based on stress relief, PhD thesis, October, 2010, University of Twente.
6. Arias-Cuevas O. (2010), Low adhesion in the wheel-rail contact, PhD thesis, September, 2010, Delft University of Technology.

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1. Li Z. (2002), Wheel-rail rolling contact and its application to wear simulation, PhD thesis, March, 2002, Delft University of Technology, ISBN 90-407-2281-1, Delft University Press.

**Book translation:**

1. Li Z. (1993). Translation of the book by J.J. Kalker, Three Dimensional Elastic Bodies in Rolling Contact (Kluwer Academic Publishers, Dordrecht, 1990), into Chinese, published by the Southwest Jiaotong University Press, Chengdu, China

**Book chapters:**

1. Li Z. (2009). Squats on railway rails. In Lewis R., Olofsson U. (Eds.), Wheel-rail interface handbook. pp. 409-436, ISBN: 978-1-84569-412-8. Woodhead publishing Limited, Cambridge, UK
2. Li Z. (2010). Two sections in the concluding technical report of InnoTrack. Ekberg A., Paulsson B. (Eds.). International Union of Railways (UIC). pp. 107-109 and 129-130, ISBN: 978-2-7461-1850-8

* **Patents:**

1. Li Z. and Rixen D. (2011). Method for detection of a flaw or flaws in a railway track, and a rail vehicle to be used in such a method. Dutch patent number 2007315. International patent application PCT/NL2012/050586. Priority date 29 Aug 2011
2. Li Z. and Molodova M. (2009). Method and instrumentation for detection of rail defect, in particular rail top defects. Dutch patent number 2003351. International patent application PCT/NL2010/050487. Priority date 13 Aug 2009

* **Other**

**Recognised engineering utilization:**

1. A measurement system for early detection of squats and other rail short wave defects.
2. Li Z. (2011). A guideline to best practice of squat treatment. Written for and upon honoured invitation by the International Union of Railways (UIC)
3. My PhD work was applied to rail profile optimisation and led to the normalization of an anti head check profile into the European standard profile 54E5 at 1:40, which results in about € 50 million savings per year on maintenance costs for ProRail and makes the railway tracks safer.

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7. Zhao X., Li Z. and Dollevoet R. (2008). An investigation on elastic-plastic rolling contact over rough surfaces using a 3-D dynamic finite element model. Proceedings of the STLE/ASME International Joint Tribology Conference, IJTC 2008, Miami, USA, pp. 553-555
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1. \* indicates corresponding author [↑](#footnote-ref-1)
2. In the Netherlands, only full professors can be the promotors/formal supervisors of PhD students/candidates. [↑](#footnote-ref-2)