# READ ME File For 'Data for 'A model for stochastic prediction of track support stiffness'’

# Dataset DOI: 10.5258/SOTON/D0844

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This dataset supports the publication:

Le Pen, L., Milne, D., Watson, G., Harkness, J., & Powrie, W. (Accepted/In press). A model for stochastic prediction of track support stiffness. Proceedings of the Institution of Mechanical Engineers, Part F: *Journal of Rail and Rapid Transit.*

**The excel files contain data reported in the paper as follows:**

Figure 10: NMT data showing the vertical deviation filtered for a 70 m wavelength on the Down line

Figure 11: Standard deviation for the worst 35 m wavelength vertical top between 20 to 220 metres, Down line

Figure 12: Vertical movements for cess end of bearers in zone 1 as trains pass on the Down line

Figure 13: Vertical movements for 6ft ends of bearers in zone 1 as trains pass on the Down line

Figure 14: Movements for bearers at zone 2 with soft USP as trains pass on the Down line (a) cess end (b)6ft end

Figure 15: Movements of bearers in zone 3 (a) Cess end, trains on the Up line (b) 6ft end, trains on the Up line (c) Cess end, trains on the adjacent Down line (d) 6ft end, trains on the adjacent Down line

Figure 16: Long bearer behaviour at zone 3 from April 2015 visit as a train passes on the Up line (a) graph (b) pictorial representation

Figure 17: Movements for bearers without USPs in zone 4 as trains passed on the Down line (a) cess end (b)6ft end

Figure 18: Movements for bearers without USPs in zone 5 as trains passed on the Down line (a) cess end (b) 6ft end

Figure 19: Movements for cess end of bearer 3 in Zone 3 between trains passing on each line

Figure 20: Boxplot to summarise bearer movement data for Class 91 loco

**Other figures in the paper are either photos or could be plotted from publically available equations.**

**Date of data collection:** from February 2014 - February 2016

**Date that the file was created:** Spring 2017

Information about geographic location of data collection: University of Southampton, U.K.

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**Related projects:**

W Powrie 2015 - EPSRC: Track to the Future  
Preston, J., Zervos, A., Thompson, D., Powrie, W. & Blainey, S.  
EPSRC, EP/M025276/1

**Date that the file was created:** Spring 2017