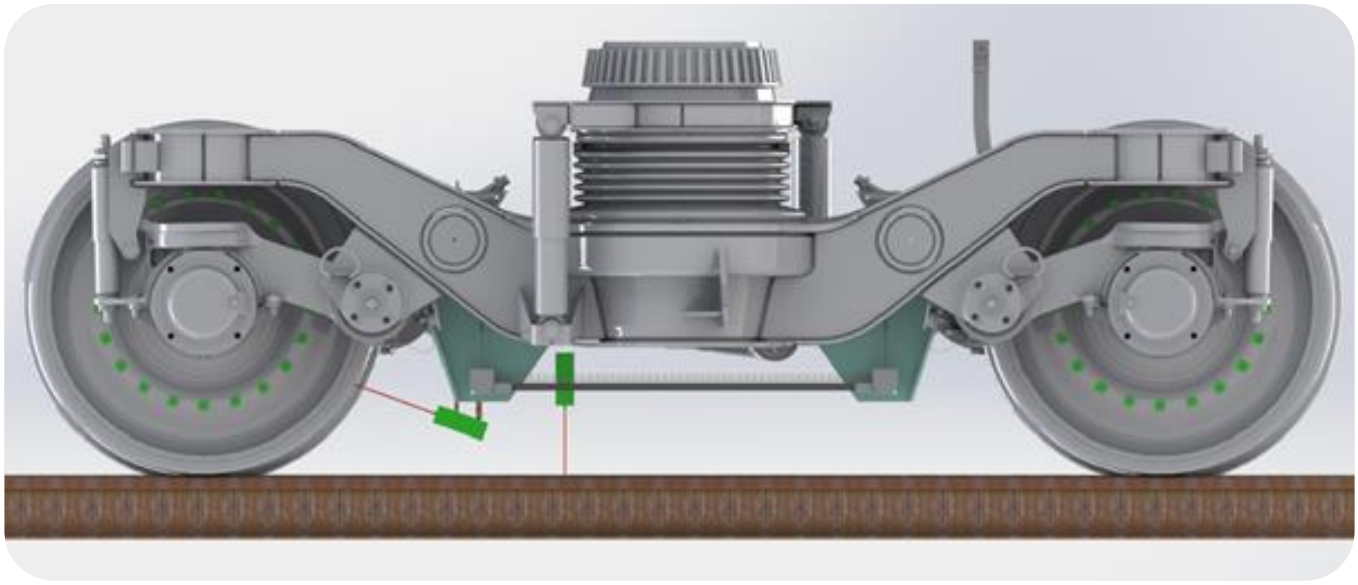


The Tribometer[1] Intelligently Managing Slippery Railways

Railway companies have always been plagued by slippery rails because of falling leaves, grease, oil, diesel, rust and water during autumn. This often leads to delays or in the worst case scenario, safety hazards. The Tribometer provides real-time information to train drivers and fleet managers on the network status, enabling efficient, safe and sustainable operation. Although manually operated friction meters for railway tracks already exist, the Tribometer is the first system capable of measuring friction levels on a moving train, enabling the use in daily operation.

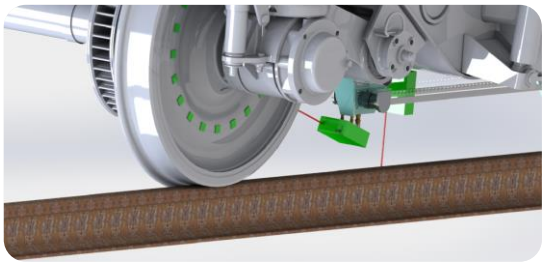
All the different levels of friction (μ) require different driving styles. A low μ (< 0.15) indicates railways are slippery, resulting in safety and punctuality concerns. A higher μ (>0.30) indicates a track that is too rough, often resulting in increased maintenance. By giving insights on the μ, railway companies can adapt their schedule and operation to real-time railway conditions.

Advantages

- Improved acceleration and deceleration schemes, less slip, less energy loss.
- Frequent update on track status due to tractive effort measurement.

This leads to:

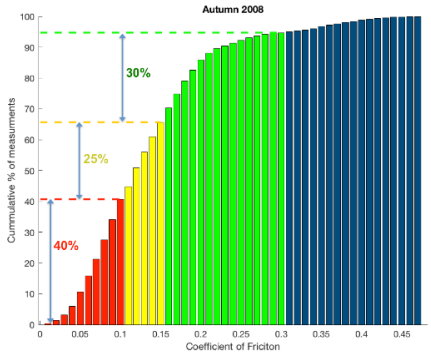
- Increased railway safety.
- Decreased vehicle maintenance.
- Increased track availability.
- Increased total track capacity.



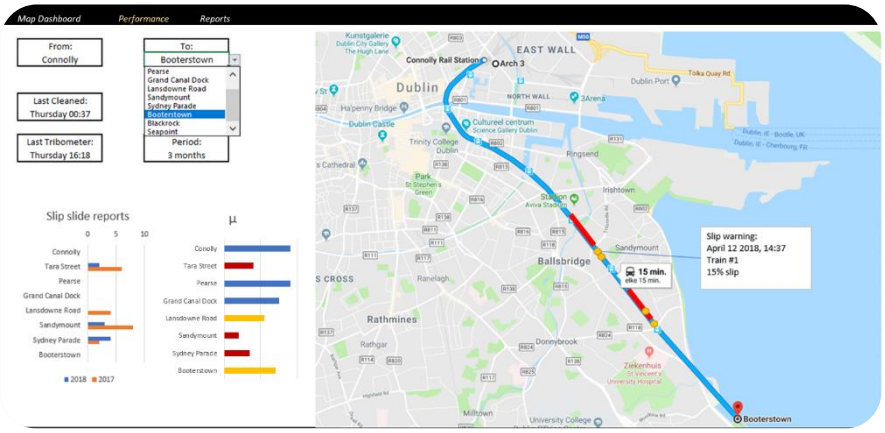
The construction can be adapted for use on most rail-based vehicles and can be adjusted for various track gauges. The system incorporates a suspension system to protect the Tribometer from railway vibrations and all sensing equipment mounted under the train bogie possess a IP54 rating or higher.

[1] Patent pending

A study[2] in 2010, using a basic slipperiness meter, measured the friction on the Dutch railroads in 2008. At least 65% of the railway tracks measured had a μ lower than 0.15 (slippery). Studies indicate that in autumn 2008, an astonishing 40% of the measured tracks had a μ below 0.10 causing severe safety concerns. The study shows that a low μ during the autumn season is not an isolated incident, but a rather serious issue that happens within the entire network.



The product



Our Tribometer comes with an integrated online dashboard where all data extracted from the trains with Tribometers is gathered and monitored. Train drivers, fleet managers and other users can login to this online platform where LPS keeps track of the network status. Using all the data supplied by the Tribometers in a fleet, LPS is able to point out problematic areas and provide focused advice using past driving experiences in that area. The more information is gathered about the network, the more specialized advice LPS can give and the more efficient our Tribometers become.

[2] Popovici, R.I. (2010). Friction in Wheel-Rail contacts

Further information?
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