In2Rail: Integrated track geometry model

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Background

Track geometry deteriorates with time and use. Its state is controlled by maintenance (tampings). Tamping breaks the ballast and changes the deterioration process (non linear behaviour).

Objective

Produce a model combining degradation and maintenance processes to ***evaluate the effects of a range of maintenance strategies*** on track geometry condition, nº of interventions, a measure of the impact on service and safety and the whole life costs.

Input :

- Line and track type (speed, EGT, service frequency, etc..)
- Historical data on track conditions and maintenance activities
- Intervention parameters (inspection frequency, thresholds triggering routine maintenance, time to schedule maintenance, etc..)

Output (distributions of) :

- no of interventions
- no of renewals
- no and duration of speed restrictions (both defined and undefined)
- no and duration of line closure (both defined and undefined)
- Probability of being in any of the degraded states

Analysis Results