**Dataset for paper "An assessment of mode-coupling and falling-friction mechanisms in railway curve squeal through a simplified approach"**

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**File "JSV\_curve squeal paper.xlsx" contains all data contained in the graphs of the paper.**

**One page is added per figure.**

**Format: Microsoft Excel**

**The excel file contains data for the paper. In particular:**

Fig. 1: friction curve used in this paper. The x-label is creepage and y-label is the adhesion coefficient.

Fig. 4: the axial and radial mobilities of the tram wheel. The x-label is frequency and y-label is the magnitude of mobility.

Fig.6: the Imaginary part (frequency) and real part (growth rate) for Case 1. The x-label for both subfigures is adhesion coefficient. The y-label is Imaginary part (frequency) and real part (growth rate).

Fig.7: the Imaginary part (frequency) and real part (growth rate) for Case 2. The x-label for both subfigures is adhesion coefficient. The y-label is Imaginary part (frequency) and real part (growth rate).

Fig.8: Stability map for the inner wheel for contact on the tread. It shows the stability of the system with different combination of offset and adhesion coefficient. The x-label is adhesion coefficient. The y-label is lateral offset.

Fig.9: Stability map for the outer wheel for contact on the flange. It shows the stability of the system with different combination of contact angle and adhesion coefficient. The x-label is adhesion coefficient. The y-label is contact angle.

Fig.10: this figure shows the effect of the damping ratio of the higher frequency mode for two cases. The x-label is adhesion coefficient. The y-label is damping ratio.

Fig.11: this figure shows the effect of the damping ratio of the higher frequency mode for two cases with keeping the ratio of the damping of two modes constant. The x-label is adhesion coefficient. The y-label is damping ratio.

Fig.12: stability map with different contact angles and friction curve slopes. It not only shows the stability of the system in the context of mode coupling, but also the stability when each wheel mode is considered as a single degree of freedom (SDOF) system. The x-label is contact angle. The y-label is friction curve slope.

Fig.13: time-domain solution and its spectrum for tangential and normal directions. The x-label is time and y-label is velocity for fig.13(a). The x-label is frequency and y-label is amplitude for fig.13(b).

Fig.14: this figure gives how the phase shift and squealing frequency change with increasing the slope of friction curve. The x-label is slope of friction curve. The y-label is phase difference and frequency for two sub-figures respectively.

Fig.15: Wheel vibration acceleration measured and their spectrograms in axial and radial direction. For the vibration data, the x-label is time and y-label is acceleration. For the spectrograms, the x-label is frequency and y-label is time.

Fig.16: wheel vibration data and its frequency spectrum for a squealing case at 2522 Hz. For the vibration data, the x-label is time and y-label is acceleration. For the spectrum, the x-label is frequency and y-label is amplitude of FFT in dB.

Fig.17: wheel vibration data and its frequency spectrum for a squealing case at 1515 Hz. For the vibration data, the x-label is time and y-label is acceleration. For the spectrum, the x-label is frequency and y-label is amplitude of FFT in dB.

Fig.18: A summary of the measured phase difference for three squealing frequencies. x-label is phase difference, y-label is the occurrences.