Electronic supplementary materials

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Influence of yaw damper layouts on locomotive lateral dynamics performance: Pareto optimization and parameter analysis

Guang LI[1], Yuan YAO[1], Longjiang SHEN[2], Xiaoxing DENG[2], Wensheng ZHONG[1]

[1]*State Key Laboratory of Traction Power, Southwest Jiaotong University, Chengdu 610031, China*

[2]*Bogie R&D Department of CRRC Zhuzhou Electric Locomotive CO., Ltd, Zhuzhou, 412001, China*

Table S1 Locomotive model parameters

Item	Value	Unit
Carbody mass	42×10^3	kg
Bogie frame mass	3441	kg
Wheelset mass	2434	kg
Wheel base	2.9×10^3	mm
Length between bogie centres	9×10^3	mm
Distance of contact point	1493	mm
Wheel rolling radius	625	mm
Friction coefficient	0.3	/
Rail cant	1:40	/
Primary vertical stiffness	15	kN/mm
Primary longitudinal stiffness	15	kN/mm
Primary lateral stiffness	3.5	kN/mm
Damping of secondary lateral damper	25	kN.s/m
Series stiffness of secondary lateral damper	25	kN/mm
Damping of yaw damper	800	kN.s/m
Series stiffness of yaw damper	22.5	kN/mm