Supplementary Material

Table 1. Notations and values of track properties in the train-track-bridge model

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| Track Properties |
| $$E$$ | $$Young's modulus of rail$$ | $$2.07E+05$$ | MPa |
| $$I$$ | $$second moment of area$$ | $$3.9E+07$$ | mm4 |
| $$EI$$ | $$Rail bending stiffness$$ | $$8.073E+06$$ | MPa.mm4 |
| $$m\_{r}$$ | $$rail mass per unit length$$ | $$67.46$$ | kg/m |
| $$c\_{p}$$ | $$rail pad damping ratio$$ | $$124$$ | kN.s/m |
| $$k\_{p}$$ | $$rail pad stiffness$$ | $$7.80E+04$$ | kN/m |
| $$m\_{t}$$ | $$crosstie mass$$ | $$386$$ | kg |
| $$m\_{b}$$ | $$ballast mass$$ | $$683$$ | kg |
| $$c\_{b}$$ | $$ballast damping ratio$$ | $$82$$ | kN.s/m |
| $$k\_{b}$$ | $$ballast stiffness$$ | $$1.2E+05$$ | kN/m |
| $$t\_{s}$$ | $$ballast shear stiffness$$ | $$7.80E+03$$ | kN/m |
| $$c\_{s}$$ | $$subgrade damping ratio$$ | $$300$$ | kN.s/m |
| $$k\_{s}$$ | $$subgrade stiffness$$ | $$5.00E+04$$ | kN/m |
| $$U\_{r}$$ | $$rail displacement$$ | - |  |
| $$U\_{t}$$ | $$crosstie displacement$$ | - |  |
| $$U\_{b}$$ | $$ballast displacement$$ | - |  |
| $$k\_{vr}$$ | $$vehicle-rail stiffness$$ | $$1.53E+06$$ | kN/m |
| $$k\_{gap}$$ | $$ballast stiffness at near$$$$-bridge tie gap location$$ | $$1.3E+08$$ | kN/m |
| $$gap$$ | $$Tie gap at near-bridge location$$ | $$1.5$$ | mm |