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The research aim is to provide the possibility of the vehicle motion of an electric dynamic transportation system on the turnout of a plane track, using mathematical modelling. The research novelty is to estimate a safe motion of the chassis vehicle on a side track of the track. It is shown that a safe motion of the vehicle at the speed of 10 and 15 m/s can be realized for the turnout consisting of two curves with a constant radius of 350 m and a straight| insert. Therein lies practical importance.

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$$D_{qv} + \Pi_{qv} + \Phi_{qv} = Q_v, \quad (v = 1, 2, ..., N) \tag{1}$$

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$$L\frac{dI}{dt} + rI = f , \tag{2}$$

$$D_{qv} = \frac{d}{dt}\frac{\partial T}{\partial \dot{q}_v} - \frac{\partial T}{\partial q_v}; \quad \Pi_{qv} = \frac{\partial \Pi}{\partial q_v};$$

$$\Phi_{qv} = \frac{\partial \Phi}{\partial \dot{q}_v}; \quad Q_v = f(F_L, F_s); \tag{3}$$

Q_v – ,

F_L, F_s , ,

;

N – ; $L = |L_{ik}|$ –

$i = k$ $i \neq k$; r –

, I – i_k k-

, f – . . . f_k ,

k- .

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(1) – (3): $D_{qv}, \Pi_{qv}, \Phi_{qv}, Q_v$ –

$q_v;$ T, Π, Φ –

; F_L, F_S –

[1].

f_k :

$$f_k = -\sum_{m=1}^{n} i_m^c \frac{\partial M_{km}}{\partial t},\qquad(4)$$

M_{km} – m-

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$z_k = 0,08$, $z_i = -0,075$, $\{_k = \{_i \approx 0$, $y_k = 0,037$, $y_i = 0,001$,

$''_k = -0,018$, $''_i = 0,001$, $Œ_k = 0,0007$, $Œ_i = 0,0002$,

$\ddot{z}_k = 0,025$ / ², $\ddot{y}_k = 0,34$ / ²;

15 / :

$z_k = 0,079$, $z_i = -0,075$, $\{_k = -0,0002$, $\{_i \approx 0$, $y_k = 0,125$, $y_i = 0,005$,

$''_k = 0,062$, $''_i = 0,001$, $Œ_k = 0,0002$, $Œ_i = 0,00002$,

$\ddot{z}_k = 0,01$ / ², $\ddot{y}_k = 0,075$ / ².

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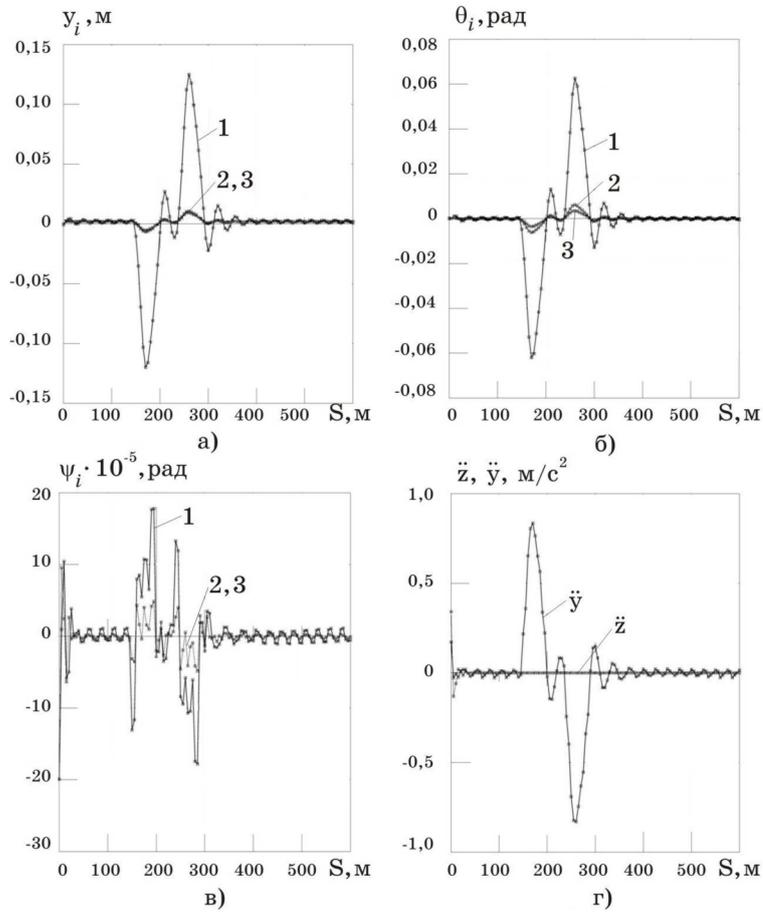1.   .   /
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