

Electronic Supplementary Material

Parallel wheelset suspension kinematic design for improved heavy-duty lunar vehicle straight-line drivability and ride comfort

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The meaning of symbols in Eq. (1)

d	Order of the mechanism
n	Number of links, including the frame
g	Number of kinematic pairs
f_i	Freedom of the i th kinematic pair
p	Limb number of the PM
ς	Number of local freedoms in the mechanism
λ	Common constraint
q	Number of constraint screws of the limb constraint system
k	Dimension of constraint space of the MP
M_n	Nominal mobility of a PM

The meaning of symbols in Eq. (2)

\circ	Reciprocal product of two screws
τ	Product of the wrench intensity and twist rates
α_{Fi}, α_{Ci}	Corresponding twist angles between \mathcal{S} and \mathcal{S}_{Fi}^r or \mathcal{S}_{Cj}^r
a_{Fi}, a_{Ci}	Module of normal vectors common between \mathcal{S} and \mathcal{S}_{Fi}^r or \mathcal{S}_{Cj}^r
h, h_{Fi}^r, h_{Cj}^r	Pitch of various \mathcal{S} , \mathcal{S}_{Fi}^r , and \mathcal{S}_{Cj}^r