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CORRECTION

Correction to: Analytical results in transient brush tyre models: theory for large camber angles and classic solutions with limited friction

Luigi Romano · Francesco Timpone · Fredrik Bruzelius · Bengt Jacobson

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Due to an unfortunate turn of events several data in this article contain errors. Please find in this document the correct versions that should be considered as final versions by the reader.

The paper considers a time-varying contact patch, i.e. $\mathscr{P} = \mathscr{P}(s)$, $\partial\mathscr{P} = \partial\mathscr{P}(s)$ and $\mathring{\mathscr{P}} = \mathring{\mathscr{P}}(s)$. The corresponding initial conditions at $s = 0$ are denoted as $\mathscr{P}_0 \triangleq \mathscr{P}(0)$, $\partial\mathscr{P}_0 \triangleq \partial\mathscr{P}(0)$ and $\mathring{\mathscr{P}}_0 \triangleq \mathring{\mathscr{P}}(0)$. The initial configuration of the leading edge $\mathscr{L} = \mathscr{L}(s)$ may also be defined as $\mathscr{L}_0 \triangleq \mathscr{L}(0)$. According to the definitions above, the following modifications should be introduced.

- Footnote 8 should be modified as "It may be understood that the assumption of constant friction coefficient ensures the initial conditions to be at least $C^0(\mathring{\mathscr{P}}_0)$".
- The IC in Eq. (11) for the bristle deflection and the following text should be modified respectively as

  IC: $\boldsymbol{u}_t(\boldsymbol{x}, 0) = \boldsymbol{u}_{t0}(\boldsymbol{x}), \quad \boldsymbol{x} \in \mathring{\mathscr{P}}_0,$

  and "for some $\boldsymbol{u}_{t0}(\boldsymbol{x}) \in C^1(\mathring{\mathscr{P}}_0;\mathbb{R}^2)$, with $\mathring{\mathscr{P}}_0 \triangleq \mathring{\mathscr{P}}(0)$ and $\boldsymbol{u}_{t0}(\boldsymbol{x}) = \boldsymbol{0}$ on $\mathscr{L}_0 \triangleq \mathscr{L}(0)$".
- Footnote 10 should be modified as "In general, it may be shown that the brush theory is indeed a weak theory, in the sense that often it does not admit any solution $\boldsymbol{u}_t(\boldsymbol{x}, s) \in C^1(\mathring{\mathscr{P}} \times \mathbb{R}_{>0})$, and therefore the assumption $\boldsymbol{u}_{t0}(\boldsymbol{x}) \in C^1(\mathring{\mathscr{P}}_0;\mathbb{R}^2)$ does not hold automatically...".
- The sentence "In the transient brush theory, however, functions solving (15) are usually only C^0 due to the possible non-analyticity of the initial conditions (for example when $\boldsymbol{u}_{t0}(\boldsymbol{x})$ is only $C^0(\mathscr{P})$)" at the end of Sect. 3 should be modified as "In the transient brush theory, however, functions solving (15) are usually only C^0 due to the possible non-analyticity of the initial conditions (for example when $\boldsymbol{u}_{t0}(\boldsymbol{x})$ is only $C^0(\mathscr{P}_0)$)".

Moreover, the notions of classical solutions and $C^k(\bar{\Omega})$-class multi-variable functions on the closure $\bar{\Omega}$ of a domain Ω have not really been defined in the

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L. Romano (✉) · F. Bruzelius · B. Jacobson
Department of Mechanics and Maritime Sciences, Chalmers University of Technology, Hörsalsvägen 7A, 412 96 Gothenburg, Sweden
e-mail: luigi.romano@chalmers.se

F. Timpone
Department of Industrial Engineering, University of Naples Federico II, Naples, Italy

F. Bruzelius
Driver and Vehicle, VTI Swedish National Road and Transport Research Institute, Box 8072, 402 78 Gothenburg, Sweden

original paper. Therefore, the following additional modifications may be introduced.

- The sentence "An elliptical contact patch is typical of motorcycle tyres or railway wheels. In this case, a unique solution $C^1(\mathscr{P}^- \times \mathbb{R}_{\geq 0};\mathbb{R}^2)$ may always be found if the condition $a^2 \leq b(b + 1/|\varphi_\gamma|)$ is verified" in Subsect 3.3 should be modified as "An elliptical contact patch is typical of motorcycle tyres or railway wheels. In this case, a unique solution $C^1(\mathring{\mathscr{P}}^- \times \mathbb{R}_{>0};\mathbb{R}^2)$ may always be found if the condition $a^2 \leq b(b + 1/|\varphi_\gamma|)$ is verified".
- The sentence "Both in transient and steady-state conditions, the complete solution over the whole contact patch is not $C^1(\mathscr{P} \times \mathbb{R}_{\geq 0};\mathbb{R}^2)$ nor $C^0(\mathscr{P} \times \mathbb{R}_{\geq 0};\mathbb{R}^2)$" in Appendix A.1 should be modified as "Both in transient and steady-state conditions, the complete solution over the whole contact patch is not $C^1(\mathring{\mathscr{P}} \times \mathbb{R}_{>0};\mathbb{R}^2)$ nor $C^0(\mathscr{P} \times \mathbb{R}_{\geq 0};\mathbb{R}^2)$".