Geometric properties of projective constraint violation stabilization method for generally constrained multibody systems on manifolds

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Errors are present in the second paragraph of Sect. 3 within the second and third sentences. The correct presentation of these sentences is given below.

The constraint matrix $\Phi_x^*(\mathbf{x}, t)$ can be written in the form $\Phi_x^{*T}(\mathbf{x}, t) = [\varphi_1^*, \dots, \varphi_r^*]$, where, for example, $\varphi_1^* = [\varphi_{1i}]$ is given as $\hat{\varphi}_1 = \varphi_{1i} \hat{\mathbf{g}}_x^i$. The vectors $\hat{\varphi}_1, \dots, \hat{\varphi}_r$ represent gradients to constraint “hyper-surfaces” determined in the configuration space by the equations $\Phi(\mathbf{x}, t) = \mathbf{0}$, i.e., $\hat{\varphi}_1 = \text{grad } \Phi_1, \dots, \hat{\varphi}_r = \text{grad } \Phi_r$.

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