Addendum

*ad observationes meas de motibus corporum elasticorum
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Humanitati ill. D. JOH. VINEOMONTANI (H. WEINBERGER) debeo solutionem generalem Aeq. (18). Sit

$$\mathbf{A} = \mathbf{R}\mathbf{S}, \quad \det \mathbf{S} = 1, \quad (1)$$

ubi $\mathbf{R}$ = matrici gyrationis, $\mathbf{S}$ = matrici affirmativae et definitae, ut sit $\mathbf{\Omega} = \dot{\mathbf{R}}^T \mathbf{R}$ = celeritati locali gyrationis. Aeq. (18) admittit primam integrationem:

$$2\mathbf{\Omega} = 2\dot{\mathbf{R}}^T \mathbf{R} = \dot{\mathbf{S}}\mathbf{S}^{-1} - \mathbf{S}^{-1}\dot{\mathbf{S}} + \mathbf{S}^{-1}\mathbf{B}\mathbf{S}^{-1}, \quad (2)$$

ubi $\mathbf{B}^T = -\mathbf{B}$ = matrici cuicunque constanti et antisymmetrae. Sequitur ergo hoc theorema non inelegans: *Data deformatione homogenea et pura $\mathbf{S}(t)$ quacunque, et dato valore $\mathbf{\Omega}_0 = \mathbf{\Omega}(t_0)$ celeritatis gyrationis instanti temporis t_0 , est semper una et una sola celeritas gyrationis $\mathbf{\Omega}(t)$ talis, ut deformatio homogenea $\mathbf{R}\mathbf{S}$ fiat motus verus cuiuscunque corporis elastici, incomprimibilis et isotropici si solae vires superficiales idoneae eo adfigantur.*

Solutio specialior, quae Aeq. (30) datur, evenit si ponantur $\mathbf{R} = \mathbf{1}$, $\mathbf{B} = \mathbf{0}$, et si deformatio pura $\mathbf{S}(t)$ sequenti aequationi differentiali satisfaciat:

$$\mathbf{S}\dot{\mathbf{S}} = \dot{\mathbf{S}}\mathbf{S}. \quad (3)$$

In hac solutione igitur $\mathbf{\Omega} = \mathbf{\Omega}_0 = \mathbf{0}$.

DD. candd. CHIAO-CHENG WANG et MARCO CARBUNCULO (RUBENSTEIN) gratias ago propter indicium lapsuum calculi. Formae emendatae aeqq. (25), (26), et (27) sequuntur:

$$-\zeta = \frac{1}{2} \left[\frac{1}{2} \left(\frac{\dot{A}}{A} \right)^2 + \frac{1}{4} \frac{\dot{A}^2}{A^2} - F^2 \alpha^2 \beta^2 \right] r^2 + \dots \quad (25)$$

Genere 4° (aeq. (14)), casu altero, $CF = 0$, et hinc $ADE \neq 0$:

$$A = -\frac{1}{DE},$$

$B = B(t)$ = functioni cuicunque temporis,

$C = KD$, ubi constans $K = 0$ si $F \neq 0$,

$D = K^* \left[\int_0^t E dt + K^{**} \right]$, ubi K^* , K^{**} constantes et $K^* \neq 0$,

$$E = \begin{cases} K' F \left(1 + K'' \int_0^t \frac{dt}{F^2} \right) & \text{si } F \neq 0, \text{ ubi } K', K'' \text{ constantes et } K' \neq 0, \\ E(t) = \text{functioni cuicunque temporis si } F = 0, \text{ sed semper } E(t) \neq 0, \end{cases} \quad (26)$$

$F=F(t)$ = functioni cuicunque temporis, et $F=0$ si $K \neq 0$,

$G=K'''D+G_0$, ubi K''' , G_0 constantes,

$H=H(t)$ = functioni cuicunque temporis,

ut

$$\begin{aligned}
 -\zeta = & \frac{1}{2} \left[\frac{1}{2} \left(\frac{\dot{A}}{A} \right)^2 + \frac{1}{4} \frac{\dot{A}^2}{A^2} - G_0^2 \frac{\dot{D}^2}{D^2} \right] r^2 + \\
 & + \frac{1}{2} \dot{\gamma} \log r + \frac{\gamma^2}{8r^2} - \frac{1}{2} \frac{\dot{D}^2}{D^2} r^2 \vartheta^2 + \\
 & + G_0 \frac{\dot{D}^2}{D^2} r^2 \vartheta + \frac{1}{2} \gamma \frac{\dot{D}^2}{D^2} \vartheta^2 - \gamma G_0 \frac{\dot{D}}{D} \vartheta + \\
 & + \frac{1}{2} \frac{\ddot{E}}{E} z^2 + \left(\ddot{H} - \frac{\ddot{E}}{E} H \right) z + \psi(t).
 \end{aligned} \tag{27}$$

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