$$
\begin{bmatrix}
u\left(e_0^2 + e_1^2 - e_2^2 - e_3^2\right) + v\left(-2e_0e_3 + 2e_1e_2\right) + w\left(2e_0e_2 + 2e_1e_3\right) \\[4pt]
u\left(2e_0e_3 + 2e_1e_2\right) + v\left(e_0^2 - e_1^2 + e_2^2 - e_3^2\right) + w\left(-2e_0e_1 + 2e_2e_3\right) \\[4pt]
-qw + rv + \dfrac{f_{Ex} + f_{cppcx} + f_{cppfx} + f_{cpscx} + f_{cpsfx} + gm(-2e_0e_2 + 2e_1e_3)}{m} \\[4pt]
pw - ru + \dfrac{f_{Ey} + f_{cppcy} + f_{cppfy} + f_{cpscy} + f_{cpsfy} + gm(2e_0e_1 + 2e_2e_3)}{m} \\[4pt]
-pv + qu + \dfrac{f_{Ez} + f_{cppcz} + f_{cppfz} + f_{cpscz} + f_{cpsfz} + gm\left(e_0^2 - e_1^2 - e_2^2 + e_3^2\right)}{m} \\[4pt]
\dfrac{e_0 p}{2} + \dfrac{e_2 r}{2} - \dfrac{e_3 q}{2} \\[4pt]
\dfrac{e_0 q}{2} - \dfrac{e_1 r}{2} + \dfrac{e_3 p}{2} \\[4pt]
\dfrac{e_0 r}{2} + \dfrac{e_1 q}{2} - \dfrac{e_2 p}{2} \\[4pt]
-\dfrac{-J_{yy} qr + J_{zz} qr}{J_{xx}} + \dfrac{-f_{cppcz} - f_{cppfz} + f_{cpscz} + f_{cpsfz}}{J_{xx}} \\[4pt]
-\dfrac{J_{xx} pr - J_{zz} pr}{J_{yy}} + \dfrac{-f_{Ez} r_{Ex} - f_{cppcz} + f_{cppfz} - f_{cpscz} + f_{cpsfz}}{J_{yy}} \\[4pt]
-\dfrac{-J_{xx} pq + J_{yy} pq}{J_{zz}} + \dfrac{f_{Ey} r_{Ex} + f_{cppcx} + f_{cppcy} + f_{cppfx} - f_{cppfy} - f_{cpscx} + f_{cpscy} - f_{cpsfx} - f_{cpsfy}}{J_{zz}}
\end{bmatrix}
$$

References:

https://www.intechopen.com/chapters/64567