94(2): Second Resonance Equation for the Bedini Motor

The source of this second resonance equation is:

$$\underline{\nabla} \times \frac{\partial \underline{A}}{\partial t} - \frac{\partial \underline{\omega}}{\partial t} \times \underline{A} - \underline{\omega} \times \frac{\partial \underline{A}}{\partial t} = \left(\frac{\partial \underline{B}}{\partial t}\right)_{\text{driving term}} \quad -(1)$$

Now differentiate eq. (1) with respect to t:

$$\frac{\partial^2}{\partial t^2}\left(\underline{\nabla} \times \underline{A}\right) + \frac{\partial}{\partial t}\left(\underline{A} \times \frac{\partial \underline{\omega}}{\partial t}\right) + \frac{\partial}{\partial t}\left(\frac{\partial \underline{A}}{\partial t} \times \underline{\omega}\right) = \left(\frac{\partial^2 \underline{B}}{\partial t^2}\right)_{\text{driving term}}$$

i.e.:

$$\underline{\nabla} \times \frac{\partial^2 \underline{A}}{\partial t^2} + \frac{\partial \underline{A}}{\partial t} \times \frac{\partial \underline{\omega}}{\partial t} + \underline{A} \times \frac{\partial^2 \underline{\omega}}{\partial t^2} + \frac{\partial^2 \underline{A}}{\partial t^2} \times \underline{\omega} + \frac{\partial \underline{A}}{\partial t} \times \frac{\partial \underline{\omega}}{\partial t} = \left(\frac{\partial^2 \underline{B}}{\partial t^2}\right)$$

$$\boxed{\left(\underline{\nabla} \times \frac{\partial^2 \underline{A}}{\partial t^2} + \frac{\partial^2 \underline{A}}{\partial t^2} \times \underline{\omega}\right) + 2\frac{\partial \underline{A}}{\partial t} \times \frac{\partial \underline{\omega}}{\partial t} + \underline{A} \times \frac{\partial^2 \underline{\omega}}{\partial t^2} = \left(\frac{\partial^2 \underline{B}}{\partial t^2}\right)_{\text{driving term}}} \quad -(2)$$

This is a resonance equation in $\underline{A}$, given $\underline{\omega}$, and for $\underline{\omega}$, given $\underline{A}$. Models and simplifications of eq. (2) could be used, or resonance solutions sought by computer.