Community comment on "Magnetostatic reciprocity for MR magnet design" by Pedro Freire Silva et al., Magn. Reson. Discuss., https://doi.org/10.5194/mr-2021-34-CC2, 2021

The use of "a rotation R" is not very clear in Equation 4. Why not just write it out explicitly in good old fashion vector notation as given below:

The introduction of the transverse position vector \( \mathbf{\epsilon} = x \mathbf{e}_x + y \mathbf{e}_y \) results in the expression

\[
\mathbf{B}_{\text{out}} = \frac{2\pi}{\rho^4} \left( \frac{\mathbf{M} \cdot \mathbf{\epsilon}}{\epsilon} - \epsilon (\mathbf{M} - \mathbf{M}_z \mathbf{e}_z) \right)
\]

for a magnetized (very long) rod of magnetization \( \mathbf{M} = (M_x, M_y, M_z) \) and radius \( a \). Gaussian units here.