

Magn. Reson. Discuss., community comment CC2
<https://doi.org/10.5194/mr-2021-34-CC2>, 2021
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Comment on mr-2021-34

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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 $\mathbf{r}_\perp = \mathbf{r} - \mathbf{r}(\mathbf{r} \cdot \mathbf{r})^{-1/2}(\mathbf{r} \cdot \mathbf{r})^{1/2}$ results in the expression $\frac{2}{2\pi\mu_0} \left(\frac{2}{a} (\mathbf{r} \cdot \mathbf{r})^{-1/2} (\mathbf{r} \cdot \mathbf{r})^{1/2} - (\mathbf{r} \cdot \mathbf{r})^{-1/2} (\mathbf{r} \cdot \mathbf{r})^{1/2} \right)$

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