

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

Tom Barbara

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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

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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  $\mathbf{r}_\perp = \mathbf{r} - \mathbf{r} \cdot \hat{\mathbf{z}} \hat{\mathbf{z}}$  results in the expression  $\frac{2}{\mu_0} \int \frac{d\mathbf{r}'}{r'^3} ((\mathbf{r} \cdot \hat{\mathbf{z}}) \mathbf{r}' - (\mathbf{r}' \cdot \hat{\mathbf{z}}) (\mathbf{r} - \mathbf{r}' \cdot \hat{\mathbf{z}} \hat{\mathbf{z}}))$

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