

On a recent paper of Misra et al

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LETTER TO THE EDITOR

On a recent paper of Misra *et al*

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Abstract. A serious error in the work of Misra *et al* is pointed out and corrected.

In this brief letter I wish to point out a serious error in the work of Misra *et al* (1973).

The paper of Misra *et al* describes some static 'solutions' of the Einstein–Maxwell field equations. In fact these are not solutions at all since the field equations they use are incorrect. Equation (4) of their paper should read

$$4\pi E_{ij} = -\{g^{ml}F_{im}F_{jl} - \frac{1}{4}g_{ij}F_{ml}F^{ml}\}$$

instead of

$$4\pi E_{ij} = \{g^{ml}F_{im}F_{jl} - \frac{1}{4}g_{ij}F_{ml}F^{ml}\}.$$

This error essentially implies that one is working with an imaginary electromagnetic field.

The final solution given in Misra *et al* can be corrected by making the transformation $a \rightarrow ia$ whereupon it then becomes the dipole solution first given by Bonnor (1966).

The error in Misra *et al* has crept into the work of others; Esposito and Witten (1973) and Wang (1974), and corrections, similar to that mentioned above have to be made in these papers also.

It is perhaps appropriate here to point out similar mistakes in Misra and Padney (1971a, b, 1973) and Misra *et al* (1972).

References

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