

Infinitely many entire solutions to the curl-curl problem with critical exponent

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We prove the existence of an unbounded sequence of solutions to

$$\nabla \times \nabla \times \mathbf{U} = |\mathbf{U}|^4 \mathbf{U}, \quad \mathbf{U}: \mathbb{R}^3 \rightarrow \mathbb{R}^3. \quad (1)$$

We combine a first group action introduced in [1] to reduce (1) to the vector Yamabe problem with a second group action introduced in [2] to recover compactness in the critical case.

This is joint work with Michał Gaczkowski and Jarosław Mederski.

References

- [1] A. Azzolini, V. Benci, T. D'Aprile, D. Fortunato: *Existence of Static Solutions of the Semilinear Maxwell Equations*, Ric. Mat., 55, 283–297, (2006).
- [2] W. Ding: *On a Conformally Invariant Elliptic Equation on \mathbb{R}^n* , Comm. Math. Phys., 107, 331–335, (1986).