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A new construction of rational electromagnetic knots

**Abstract**

We set up a correspondence between solutions of the Yang-Mills equations on  $\mathbb{R} \times S^3$  and in Minkowski spacetime via de Sitter space. Some known Abelian and non-Abelian exact solutions are rederived. For the Maxwell case we present a straightforward algorithm to generate an infinite number of explicit solutions, with fields and potentials in Minkowski coordinates given by rational functions of increasing complexity. We illustrate our method with a nontrivial example.