



CONSTANT SOLUTIONS OF YANG-MILLS EQUATIONS AND GENERALIZED PROCA EQUATIONS

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Communicated by Gregory Naber

Abstract. Here we present some new equations which we call Yang-Mills-Proca equations (or generalized Proca equations). This system of equations is a generalization of Proca equation and Yang-Mills equations and it is not gauge invariant. We present a number of constant solutions of this system of equations in the case of arbitrary Lie algebra. We consider in detail the case when this Lie algebra is a Clifford or a Grassmann algebra and derive solutions of Yang-Mills equations in the form of perturbation theory series near the constant solution.

MSC: 70S15, 15A66, 15A75

Keywords: Clifford and Grassmann algebras, Proca equation, Yang-Mills equations

Contents

1	Introduction	54
2	Relativistic Form of Maxwell's Equations	54
3	Proca Equations	55
4	Yang-Mills Equations	56
5	Yang-Mills-Proca Equations	58
6	Constant Solutions of Yang-Mills-Proca Equations	59
7	Anti-Commuting Solutions of Yang-Mills-Proca Equations	60
8	Solutions of Yang-Mills Equations via Perturbations	63
9	Yang-Mills-Proca Equations in Clifford Algebra	65
10	Grassmann Numbers as Solutions of Yang-Mills-Proca Equations in Clifford Algebra	69
	References	71
	doi: 10.7546/jgsp-42-2016-53-72	53