# Holographic entanglement entropy in the Gauss-Bonnet vacuum in the presence of a laminating antifield bubble 

Alexey M. Kravchuk

June 15, 2019


#### Abstract

In this paper we study the entanglement entropy of a laminating antifield bubble in the Gauss-Bonnet vacuum. The solution of the Gauss-Bonnet equation is given by the solution of the LorenzHawking equation. The vacuum is divided into four parts. The second part contains a Lax antifield bubble. The solution of the LorenzHawking equation is solved by solving a complicated system of the Gauss-Bonnet equations. The results obtained here are qualitatively the same as those obtained in the absence of the antiferromagnetic bubble.


## 1 Introduction

The physical description of a laminating antiferromagnetic object is a difficult problem and is a subject of great interest for various applications ([?]). An interesting problem is to describe the nonlinear interaction between two laminating objects in the Gauss-Bonnet (Gauss-Bonnet) vacuum. Such an application has been proposed by several authors [?, ?, ?] and in particular by a group of physicists [?]. Apart from theoretical work, the physical description of laminating antiferromagnetic objects is of great importance.

A common approach to laminating antiferromagnetic objects is the application of the Gauss-Bonnet (Gauss-Bonnet) equation [?]. The EulerLagrange theorem of R. W. Goddard [?] gives a proof of the general form
of the Gauss-Bonnet equation. This equation describes a complex structure given by a Lagrangian [?] and an antiferromagnetic field [?]. The LorenzHawking equation, which describes the dynamic behaviour of the Lagrangian, has also been largely obtained by Lovin and Gumbel [?].

In this paper we propose a different approach to the problem of laminating antiferromagnetic objects in the Gauss-Bonnet (Gauss-Bonnet) vacuum. We are interested in the realisation of the Lorenz-Hawking equation of R . W. Goddard [?] and Lovin and Gumbel [?] in the absence of a laminating antiferromagnetic object.

This paper is organised as follows.

## 2 Completeness of a Lagrangian before Introduction.

itemWGBWitemWGBWitemWGBWitemWGBW

