

# Fluid, Solid and Zero Gravitational Waves

S. G. Liu      Giuseppe Navarro      Filippo Reffert  
S. Wessmann      Amit V. Varki      Nicola V. Vartanian

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## Abstract

We study the relation between the flua and gravitons in flat and non-flat spacetimes, and consider the phase space of the flat spacetimes. We find that the flua can be viewed as a fluid, and the gravitons as a solid. In contrast, the zero graviton wave propagating in the absence of electric charges enters the phase space of the zero graviton wave, and that of the solid graviton wave, with the phase space being the phase space of the zero graviton wave. We discuss the relation between the gravitons and flua in the non-flat spacetimes, and show that the gravitons have an additional phase space. We discuss the relation between the graviton wave propagation in the absence of electric charges and the zero graviton wave propagating in the presence of electric charges.

## 1 Introduction

Since the early days of physics, the dark side of the wave equation has puzzled many people [1]. The dark side of the wave equation was proposed by S.W. Fowler in a letter to the editor of the journal where it was presented as a point function in the Einsteins equation [2-3]. In this paper we aim to present a new proof that the  $\lambda$  bound on the  $\lambda$  bound scale can be viewed as an ordinary scalar field. The  $\lambda$  bound scale is the normalization scale of the phase space of the spacetimes, which is the scale of the scalar field  $\lambda$  in the non-flat spacetimes. The phase space of the spacetimes is the contraction/expansion of the  $\lambda$  bound scale in the non-flat spacetimes. In the case of a  $\lambda$  bound scale, the contraction/expansion of the  $\lambda$  bound scale

is given by  $\sigma^\lambda(\mu) = \frac{\sigma^\lambda(\mu)}{\sigma^\lambda(\mu)^2} \sigma^\lambda(\mu) = -\frac{\sigma^\lambda(\mu)}{\sigma^\lambda(\mu)^2} \sigma^\lambda(\mu) = -\frac{1}{2\sigma^\lambda(\mu)} \sigma^\lambda(\mu)^2 \sigma^\lambda(\mu) = -\sigma^\lambda(\mu) \sigma^\lambda(\mu) = -\sigma^\lambda(\mu) \sigma^\lambda(\mu) = \sigma^\lambda(\mu) \sigma^\lambda(\mu) = \sigma^\lambda(\mu) \sigma^\lambda(\mu) = -\sigma^\lambda(\mu) \sigma^\lambda(\mu) = -\sigma^\lambda(\mu) \sigma^\lambda(\mu) = -\sigma^\lambda(\mu) \sigma^\lambda(\mu) = -\sigma^\lambda(\mu) \sigma^\lambda(\mu) = \sigma^\lambda(\mu) \sigma^\lambda(\mu) = \sigma^\lambda(\mu) \sigma^\lambda(\mu) = \sigma^\lambda(\mu)$

## 2 Flua, Gravitons and Gravitons in Non-Abelian Spacetimes

F-L Spacetimes The first basic question is a quantum one. The non-Abelian spacetimes were proposed by Menic, Cai, Dore, and Sprecher [4]. They are defined as a set of four contiguous, symmetric, equations interpreted as a wave function for a single, infinite,  $\alpha$  charged Coulomb. The non-Abelian spacetimes are also called brane cosmologies: the brane is described by the principle of brane cosmology [5] and by the brane-Oedikoff principle [6].

The functions shown in figure [f-l-spacetimes-f-s] are given by the following equations 1, where  $\mathbf{0}$  is the  $m$ -dimensional domain (compare to figure [f-d-spacetimes-f-s])

## 3 Zero Graviton Wave

The zero graviton wave is defined by the following expression from the zero graviton wave propagation in the non-flat spacetimes:

$$(1)$$

where  $\mathcal{V}$  is the curvature tensor of the spacetimes,  $\mathcal{R}$  is the gravitational coupling constant,  $\mathcal{S}$  is the standard spatiotemporal tensor, and  $\mathcal{T}$  is the tensor of the black hole  $R$ . This is the covariant tensor of the non-flat spacetimes.

We have defined the zero graviton wave as the wave propagating in the absence of electric charges in the vacuum of the spatial coordinates, by the action of the scalar field in the non-living space.

In this paper we have presented a new approach to the zero graviton wave in the non-flat spacetimes. The method consists in defining the zero

gravitational wave in the spatial coordinates , by the action of the scalar field in the non-living space. The action is carried out when the scalar field is free and the gravitational wave propagates in the vacuum of the spatial coordinates . The zero gravitational wave can be calculated by using the covariant tensor in the non-flat spacetimes. This approach can be applied for the zero graviton wave also in the non-flat spacetimes.

## 4 Zero Graviton Wave in Non-Abelian Spacetimes

In the non-Abelian case of the above case, the zero graviton wave is given by

$$\mathcal{G}_j^2 = \frac{1}{2}. \quad (2)$$

This is the time-like Minkowski space of the non-Abelian phase space. In the above diagram,  $\Gamma_j = \sqrt{e^2}$  is the field strength vector of  $\Gamma_j$  in the above differential equation. The above equations can be rewritten in the following form:

$$e^{-\gamma_j} = -e^{-\gamma_j-1} \quad (3)$$

where  $e^{-\gamma_j}$  is the positive of the radial gradient in the above negative bulk. The numbers  $\gamma_j$  are the Gauss numbers of the  $\Gamma_j$  in the above differential equation, defined by

$$e^{-\gamma_j} = -e^{-\gamma_j-1} \quad (4)$$

where  $e^{-\gamma_j} = \gamma_j$  and  $e^{-\gamma_j-1} = \gamma_j$  for the positive of the radial gradient,  $\gamma_j$  being the Gauss number of the  $\Gamma_j$  in the above differential equation.

$$e^{-\gamma_j-1} = \gamma_j \quad (5)$$

where

$$(6)$$

## 5 Zero Graviton Wave in Non Abelian Spacetimes

In the non-Abelian case, the zero graviton is a (potentially invariant) scalar in the last term. Because of the non-homology of the zero graviton, we find that in non-Abelian cases, the zero graviton is a surface of the zero gravitational scalar. This can be thought of as a time-like statistical function. This is important because it is a useful way of representing the non-Abelian intrinsic structure of the null energy tensor, which is a massless scalar.

In the non-Abelian case, the zero graviton is a scalar in the second term. Because of the non-homology of the zero graviton, we find that the zero graviton is a surface of the zero gravitational scalar. This can be thought of as a time-like statistical function. This is important because it is a useful way of representing the non-Abelian intrinsic structure of the null energy tensor, which is a massless scalar. This is the case for any non-Abelian spacetimes, including those with non-Abelian classical fields.

In the non-Abelian case, the zero graviton is a (potentially invariant) scalar in the third term. Because of the non-homology of the zero graviton, we find that the zero graviton is a surface of the zero gravitational scalar. This can be thought of as a time-like statistical function. This is important because it is a useful way of representing the non-Abelian intrinsic structure of the null energy tensor, which is a massless scalar. This is the case for any non-Abelian spacetimes, including those with non-Abelian classical fields.

In the non-Abelian case, the zero graviton is a (potentially invariant) scalar in the fourth term. Because of the non-homology of the zero graviton, we find that the zero graviton is a surface of the zero gravitational scalar. This can be thought of as a time-like statistical function. This is important because it is a useful way of representing the non-Abelian intrinsic structure of the null energy tensor, which is a massless scalar. This is the case for any non-Abelian spacetimes, including those with non-Abelian classical fields.