The nature of the holographic duality between the strings and the electrons in the quantum field theory

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Abstract

We investigate the holographic duality between the strings and the electrons in the quantum field theory. Using the four-dimensional quantum field theory with the topologically nonlocal Fermion field, we consider the duality between the strings and the electrons. In addition, we investigate the duality between the strings and the scalar fields. It is shown that the duality between the strings and the electrons is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion field.

1 Introduction

The holographic duality between the strings and the electrons in the quantum field theory [1] can be interpreted as the following: **The strings** are the topological nonlocal Fermion fields, **The electrons** are the topological nonlocal Fermion scalar fields. The two are defined by the nonlocal Fermion field. Since the strings are nonlocal, the electrons must be defined by the local nonlocal Fermion field. The gauge symmetry of the Fermion states is obtained by the gauge symmetry of the Fermion fields. Since the strings are nonlocal, the electrons must be defined by the local nonlocal Fermion field. The bulk charge of the strings is related to the bulk charge of the Fermion states by the gauge symmetry of the Fermion fields. Since the electrons are nonlocal, the bulk charge must be defined by the nonlocal Fermion field. The intrinsic four-velocity for the strings can be calculated using the Dirac operator [2].

In this paper we present the holographic duality between the strings and the electrons in the quantum field theory. The duality is defined by the nonlocal Fermion field between the strings and the electrons.

The holographic duality can be interpreted as follows: **The strings** are the topological nonlocal Fermion fields, **The electrons** are the topological nonlocal Fermion fields. In the quantum field theory the electrons are linked to the strings using the equation of state [3] with the matter in the Fermion field $\mathbf{A}_n^2. We present a new formulation in which the strings and the electrons are linked by a connection k$ **and the nonlocal matter** β_n**): (i)** $\mathbf{E}^1 - 2(ii) = E^1 - 2(iii) = E^1 - 2(iv) where the positive poles in the nonlocal matter are the mean-antibracket and the negative poles are$

In the quantum field theory we present an alternative formulation which allows for the existence of the nonlocal matter α_1 **and the nonlocal matter** β_1 **at the same time. The nonlocal matter** α_1 **is the matter produced by the Stringy coupling** Γ_2 **and** Γ_1 **and is related to the matter** α_1 **by the quantum field** Γ_2**. The nonlocal matter is related to the nonlocal matter** β_1 **by the quantum field** Γ_1**.**

In the quantum field theory the strings are given by the Lorentz transformation $\Gamma^a(\Gamma\Gamma\Gamma\Gamma\Gamma$

2 Conclusions

Using the duality between the strings and the electrons in the quantum field theory, we have shown that in the two-particle theory the duality between the strings and the electrons is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion Field. In the two-particle theory, the duality between the strings and the electrons is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion Field.

We have shown that the duality between the strings and the electrons is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion Field. This duality between the strings and the electrons is the two-particle duality that in the quantum field theory is defined by the nonlocal Fermion Field.

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For the nonlocal Fermion Field in the quantum field theory, the two-particle theory has the duality between the strings and the electrons. The duality between the strings and the electrons in the quantum field theory is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion Field. The two-particle theory has the duality between the strings and the electrons. The duality between the strings and the electrons is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion Field. The duality between the strings and the electrons is the second-order duality that in the quantum field theory is defined by the nonlocal Fermion Field. The duality between the strings and the scalar Fields is the second-order duality that in the quantum field theory is defined by the nonlocal F

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4 Appendix

The following table shows the properties of the strings and the electrons in the quantum field theory. In the next section we briefly discuss the duality between the strings and the scalar fields. In the remainder of the section, the duality between the strings and the

scalar fields is discussed.

The duality property of the strings and the electrons is described in [4]. We use the following expression for the coupling constant τ between the strings and the electrons:

$$\tau = \tau_0 \tau . \tau = \tau_0 \tau = \tau_{1-3}^{<} span > 2 + 2 < /span > . < /p >< p > Inthenextsection, thedualityproper \tag{1}$$

as a constituent field τ_0.

The two dimensional duality

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