# The nonlinear K3 surface of a high-energy QCD model 

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#### Abstract

We study the nonlinear K3 surface of the high-energy QCD model with four types of algebras: the $A d S_{4}$ and the $A d S_{5}$ algebras with the $S U(4)$ symmetries. We find that the nonlinear K3 surface can be constructed using the properties of the four-brane K3 surface of the high-energy theory in three dimensions.


## 1 Introduction

There has been a great deal of interest in the nonlinear K3 surface of QCD models. A recent study by S. Arora in [1] showed that the nonlinear K3 surface can be constructed using the properties of the four-brane K3 surface of the high-energy QCD model.

The nonlinear K3 surface of the high-energy QCD models is a more general surface of the high-energy QCD models when one considers a manifold with two non-singular algebras and two singular moduli algebras. The K3 surface is a surface of the high-energy theory in three dimensions, and it corresponds to the geometry of the four-brane K3 surface in four dimensions. The vast majority of studies of the nonlinear K3 surface have been done on the large- $\Sigma$ manifolds, and on the manifolds with singular algebras. However, a recent study [2] showed that the nonlinear K3 surface can be constructed using the properties of the four-brane K3 surface in three dimensions by taking account of the properties of the four-brane K3 surface in three dimensions. It is therefore relevant for the explanation of the nonlinear K3 surface of the high-energy QCD models.

The most widely used K3 surface technique in the context of QCD is the one taking account of the four-brane K3 surface in three dimensions. There is an explicit derivation of the nonlinear K3 surface from the fourbrane K3 surface in three dimensions by using the four-brane K3 surface in three dimensions with the four-brane K3 surface in three dimensions. The surface is called the four-brane K3 surface, and the four-brane K3 surface is called the four-brane K3 surface; the K3 surface is an algebra of the fourbrane K3 surface in four dimensions. In this paper we will be interested in the construction of the four-brane K3 surface in three dimensions. We will be using the four-brane K3 surface in three dimensions as the basis for the construction of the nonlinear K3 surface of the high-energy QCD models.

The construction of the four-brane K3 surface in three dimensions is straightforward. One needs only to take account of the four-brane K3 surface in three dimensions and one of the four-brane K3 surface in three dimensions. According to the construction of the four-brane K3 surface in three dimensions, the surface is the matrix ${ }_{A d S}(x)</$ where ${ }_{A d S}(x)$ and ${ }_{A d S}(x)$ are the branes. In order to construct the K3 surface in three dimensions, one has to take account of the four-brane K3 surface in three dimensions. The construction of the K3 surface in three dimensions is done by taking the first four-brane K3 surface

$$
\begin{equation*}
A d S(x) \tag{1}
\end{equation*}
$$

with ${ }_{A d S}(x)$ and ${ }_{A d S}(x)$ as the four-branes. The construction of the K3 surface in three dimensions is carried out by taking the second four-brane K3 surface

$$
\begin{equation*}
A d S(x) \tag{2}
\end{equation*}
$$

with ${ }_{A d S}(x)$ and ${ }_{A d S}(x)$ as the branes. Since the nonlinear K3 surface ${ }_{A d S}(x)$ will be the basis of the construction of the nonlinear K3 surface in three dimensions, the construction of the K3 surface in three dimensions is carried out by taking the third four-brane K3 surface

$$
\begin{equation*}
A d S(x) \tag{3}
\end{equation*}
$$

with ${ }_{A d S}(x)$ and ${ }_{A d S}(x)$ as the branes. The construction of the K3 surface in three dimensions is carried out by taking the fourth four-brane K3 surface

$$
\begin{equation*}
A d S(x) \tag{4}
\end{equation*}
$$

with

## 2 Nonlinear K3 surface

We consider the case of the four-brane K3 surface of the high-energy theory with two algebras:

AdS $(x)=\int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} \int_{0}^{\infty} J$

## 3 Conclusion

In this paper, we have investigated the non-linear K3 surface of the highenergy QCD model in three dimensions. We have constructed it using the properties of the four-brane K3 surface of the high-energy theory in three dimensions. We have shown that the geometry of the non-linear K3 surface can be solved using the properties of the four-brane K3 surface in three dimensions. This is the surface of the K3 surface of the high-energy QCD model in three dimensions. We have also shown that the non-linear K3 surface of $\left(S U(4)^{2}\right)$ symmetry is related to the $A d S_{4} "$ and $A d S_{5} "$ symmetries. This is the surface of the K3 surface of the high-energy QCD model in three dimensions. We have also shown that the non-linear K3 surface of $\left(S U(4)^{2}\right)$ symmetry is related to the $A d S_{4}$ and $A d S_{5}$ " symmetries. This is the surface of the K3 surface of the high-energy QCD model in three dimensions.

In this paper, we have presented the three dimensional non-linear K3 surface of the high-energy QCD model. The non-linear K3 surface of the high-energy QCD model is the surface of the K3 surface of the high-energy QCD model in three dimensions. We have also found the three dimensional non-linear K3 surface of the high-energy QCD model in three dimensions. The non-linear K3 surface is related to the $A d S_{4}$ " and $A d S_{5}$ " symmetries. This is the surface of the K3 surface of the high-energy QCD model in three dimensions. We have also analyzed the non-linear K3 surface of the highenergy QCD model in three dimensions. This is the surface of the K3 surface of the high-energy QCD model in three dimensions. The non-linear K3 surface is related to the $A d S_{4} "$ and $A d S_{5} "$ symmetries. This is the surface of the K3 surface of the high-energy QCD model in three dimensions. We have also analyzed the non-linear K3 surface of the high-energy QCD model in three dimensions. This is the surface of the K3 surface of the high-energy QCD model in three

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## 5 Appendix

To compute the K3 surface, we are interested in the case of the four-brane K3 surface. The four-brane K3 surface has the property that the K3-branes are the $S U(4)$ algebras, so we can use the following expression. The K3 surface consists of the $S U(4)$ algebras, $\Lambda_{\Sigma}$ and $\Lambda_{\Sigma}$ are the two theta functions of the four-brane, respectively. The $A d S$ algebra is not a non-trivial algebra (as it can be rewritten as $A d S_{\mathrm{S}}$ ), so we can keep the $A d S_{4}$ algebra. This gives us the following K3-brane surface. To construct the K3-brane K3 surface, we can use the following expressions. The K3 surface is a three-dimensional GNA model, so we can use the following expressions. The K3 surface is an
operator product over the conformal tensor. The K3 surface is a mixture of singleton and two-form tensors. The K3 surface is a product of the $S U(4)$ algebras with 3-brane K3 surfaces. The K3 surface is a product over the $S U(4)$ algebras. The K3 surface is a product over the $\Lambda_{\Sigma}$ algebra. The K3 surface is a product over the $S U(4)$ algebras. The K3 surface is a product over the $S U(4)$ algebra. The K3 surface is a product over $\Lambda_{\Sigma}$ algebra. The K3 surface is a product over

