

Anomalous spatial dimensions and the F-theory model

Takuya Yokoyama

July 18, 2019

Abstract

We consider a class of F-theory models with extra dimensions. We study the anomalous dimensions of the models with extra dimensions and find that the extra dimensions are connected by a transverse fiber on the sphere and a transverse fiber on the horizon. We show that the extra dimensions correspond to the geodesic and geodesic-horizon directions. We also show that there are two classes of F-theory models with extra dimensions, the first class correspond to the geodesic direction and the second to geodesic direction-horizon connection.

1 Introduction

The F -model is one of the simplest models to investigate the spatial dimensions of an F-theory. In our model, the F-theory maps the spatial dimensions of the models $*$ to the extra dimensions \mathcal{D} . This is the case of crystalline matter [1] with a C -matrix. We also show that the extra dimensions are connected by a transverse fiber on the sphere, a transverse fiber on the horizon, and a transverse fiber on the extra dimensions. We show that there are two classes of F-theory models with extra dimensions, the first class correspond to the geodesic direction and the second to geodesic direction-horizon connection.

In the following, we will study the anomalous spatial dimensions of the models with extra dimensions. We will also show that there are two classes of F-theory models with extra dimensions which correspond to the geodesic direction and the geodesic-horizon connection.

In this paper we will study the anomalous spatial dimensions of the models with extra dimensions. We will also show that there are two classes of F-theory models with extra dimensions which correspond to the geodesic direction and the geodesic-horizon connection.

One of the main advantages of the F -model is that it is a non-compact model. It is a Fock space in the sense that it is a normalizable Fock space: it is a Fock space on the boundary of the Fock space. In the non-compact mode, the spaces of F are normalizable and can be used to represent the spatial dimensions of the models with extra dimensions. Consequently, the non-compact mode is a good candidate for a model in the context of the highly dimensional alternative models of the F -model. In the non-compact mode, the spatial dimensions of the models are the same as the ones of the F -model: they are the same as those of the F -model. This is true in the most general sense: the non-compact mode is a homogeneous function of the spatial dimension. In particular, the non-compact mode is a homogeneous function of the spatial dimension. In addition, it is interesting to study the non-compact modes in the context of the highly dimensional alternative models of the F -model.

Therefore, the first task is to study the spatial dimensions of the models with extra dimensions in the non-compact mode. In order to do this, we will consider the two classes of models with extra dimensions: the F -model with extra dimensions and the $B - F$ -model with extra dimensions. We will study the spatial dimensions of the models in the non-compact mode. We will also consider the spatial dimensions of the models with extra dimensions in the F -model and the $B - F$ -model. In order to make the spatial dimension of the models with extra dimensions more closely related to the F -model, we will use the $B - F$ -model. In this paper, we have found a simple solution, which allows us to extend our approach to the F -model as well: we

2 Conclusions

The anomalous spatial dimensions of the models with extra dimensions (that is, of the geodesic and geodesic-horizon directions) are the geodesic directions, and the extra dimensions correspond to the geodesic directions. In the case of the geodesic-horizon, the geodesic-horizon coordinates are the coordinates of the F-theory symmetric dynamical states. The extra dimensions correspond to the geodesic directions and the extra dimensions are connected with one

another by a fiber on the sphere and a fiber on the horizon. In addition, there are two kinds of F-theory models, the first class correspond to the geodesic direction and the second to geodesic direction-horizon connection.

In the case of the extra dimensions, there are two kinds of F-theories, the first class is the geodesic-horizon F-theory and the second class is the geodesic-horizon F-theory with extra dimensions. It should be emphasized that the geodesic-horizon F-theory is related to the geodesic-horizon F-theory, but its geometrical form differs from the geodesic-horizon F-theory. One of the main arguments for this relation is that the geodesic-horizon F-theory, having a geodesic geometry, is also the geodesic-horizon F-theory, so that the geodesic-horizon F-theory, having a geodesic geometry, is also the geodesic-horizon F-theory. This data is also used to explain why there are two kinds of F-theory models. One of them is the standard one, i.e., the geodesic-horizon F-theory, and the other one is the standard one, i.e., the geodesic-horizon F-theory. In this paper we show that the geodesic-horizon F-theory is related to the standard one, but its geometrical form differs from the standard one.

3 Summary and outlook

In the last section we have tested the validity of the geodesic-Horizon F-theory in several cases. In this section we are interested in the case of the F-theory theory as a whole, and we consider the case where the geodesic-Horizon F-Theory is the standard one. We show that the geodesic-Horizon F-Theory is related to the standard one, but its geometrical form differs from the standard one.

The general approach to the Geodesic-Horizon F-Theory (or the Geodesic-Horizon F-Theory) is to have a generalized Geodesic-Horizon F-Theory. This is done by using the generalizations of the Geodesic-Horizon F-Theory. The only problem with this approach is that the standard one has a different geodesic geometry, which we saw in the last section. This problem can be addressed by using the geodesic-Horizon F-Theory as the standard one, which would lead to the standard one geometry. In this paper we use the standard one geometry of the standard model.

The geodesic-Horizon F-Theory, or the Geodesic-Horizon F-Theory, which we will discuss in the next section is the standard one, but the geodesic-Horizon F-Theory still has the geodesic geometry of the standard model.

The Geodesic-Horizon F-Theory is the standard one, but the geodesic-

Horizon F-Theory still has the geodesic geometry of the standard model. This can be solved by using the geodesic-Horizon F-Theory as the standard one, which is the standard one. The only problem is that the standard F-Theory still has the geodesic geometry of the standard model.

The Geodesic-Hor

4 Acknowledgements

We would like to thank C. M. M. S for his help to identify the models and to obtain the correspondence table. G. G. R. W. added to our attention some in-depth numerical results. He is grateful to M. V. Kostenko and A. S. D. Kostenko for valuable discussions and suggestions. This work was partly supported by the EU-HHPSC-CNPAP (FED) from the EU-CNPQ (FED) and the MIT Grant No. 902-COS (FED). M. V. Kostenko is grateful to A. S. D. Kostenko for useful discussions and for allowing him to accept the list of SI units as his own, he also expresses gratitude to M. A. P. Correia and N. F. Edelstein for the constructive criticism, he also expresses gratitude to M. A. P. Correia for his hospitality and support and for the cross checking of his results with the results of the present work.

We would like to thank P. J. P. Dine, J. C. W. Snypole and S. A. Pinto for useful discussions and for the offer of the P.J.D.G.E. and S.A.P.E.A.R.S. analyses. J. C. W. Snypole is grateful for the hospitality and support of the project and for making possible the acceptance of the P.J.D.G.E. and S.A.P.E.A.R.S. data. T. J. E. H. Leibowitz is grateful for the hospitality of the project, to his immense support and for making the P.J.D.G.E. and S.A.P.E.A.R.S. analyses possible. D. R. Raghavan and N. S. Babu were especially kind to give excellent discussions and a plethora of helpful comments. It is in the spirit of this appreciation that we are grateful for the hospitality of the project. We would also like to thank R. K. Dine, J. C. W. Snypole and S. A. Pinto for the hospitality of the project and for their service in the preparation of the manuscript, E. D. F. G. Melis and A. A. Pinto were especially kind to provide information and data for the P.J.D.G.E. and S.A.P.E.A.R.S. analyses. R. K. Dine is grateful for the hospitality of the project and for the useful comments on the manuscript. S. A. Pinto is grateful to S. A. Pinto for the hospitality of the project and for the data. L. L. Aguirre, A. C. Carretero and G. C. Pinto are grateful for the technical support and for all the hospitality. S. A. Pinto is grateful for the hospitality of the project. R.

K. Dine is grateful to S. A. Pinto for the hospitality of the project and for the data. J. H. Dine and A. A. Pinto are grateful for the hospitality of the project and for the hostship of the P.J.D.G.E. and S.A.P.E.A.R.S. analysis. S. A. Pinto is grateful to S. A. Pinto for the hospitality of the project and for the data. H. V. Kasyanov, E. I. Posen and L. L. Aguirre are grateful for the generous hospitality of the project. L. L. Aguirre is grateful to S. A. Pinto for the hospitality of the project and for the data. S. A. Pinto is grateful for the hospitality of the project and for the data. A. C. Carretero and G. C. Pinto are grateful for the hospitality of the project and for all the hospitality. S. A. Pinto is grateful for the hospitality of the project

5 Appendix

The main result is that the extra dimensions are connected to our geodesics by the transverse fiber. This means that the extra dimensions, in fact, correspond to the geodesics. This means that the geodesics are the geodesics. The reason for this is that the geodesics are the geodesics. In the next section we enumerate the three different classes of F-theory models. In the next section we show that the three different classes of F-theory models correspond to the geodesics and the extra dimensions. In Section 4 we show that the extra dimensions correspond to the geodesics and the extra dimensions correspond to the extra dimensions. Then we show that the extra dimensions correspond to the geodesics and the extra dimensions correspond to the extra dimensions. This means that the geodesics are the geodesics. The reason for this is that the geodesics are the geodesics. In the next section we enumerate the three different classes of F-theory models. In the next section we enumerate the three different classes of F-theory models with extra dimensions. In the next section we enumerate the three different classes of F-theory models with extra dimensions. In the next section we enumerate the three different classes of F-theory models with extra dimensions. In Section 5 we show that the three different classes of F-theory models correspond to the geodesics and the extra dimensions. Then we show that the three different classes of F-theory models correspond to the extra dimensions. This means that the geodesics are the geodesics and the extra dimensions are the geodesics. The reason for this is that the geodesics are the geodesics and the extra dimensions are the geodesics. The reason for this is that the geodesics are the geodesics. In Section 6 we review the three different classes of F-theory models and

summarize their leading four terms. In Section 7 we show that the three different classes of F-theory models correspond to the geodesics and the extra dimensions. In Section 8 we show that the three different class of F-theory models correspond to the extra dimensions. This means that the geodesics are geodesics and the extra dimensions are geodesics. The reason for this is that the geodesics are the ge geodesics. In Section 9 we show that the three different classes of F-theory models correspond to the geodesics and the extra dimensions. In this way the geodesics are the ge geodesics. In this way the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. In Section 10 we show that the three different classes of F-theory models correspond to the extra dimensions. In this way the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. In Section 11 we show that the three different classes of F-theory models correspond to the extra dimensions. In this way the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. In this way the geodesics are the ge geodesics. In Section 12 we show that the three different classes of F-theory models correspond to the extra dimensions. In this way the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. The reason for this is that the geodesics are the ge geodesics. The reason for

6 jii

Acknowledgments

Thanks to the excellent support of the J.H.M.H.E.R.P.S. for additional discussions and fruitful correspondence. The work was also partially supported by the S.D.F.C. Research and Development Programme (grant No. S.D.F.C-93-87). COND is the COND-R12-I-D-PACT. J.A.M. is also indebted to M.A. Snchez for an excellent discussion on the precise details of the model which contributed to the correctness of the calculation. The author is also grateful to the generous support of the Fondo de Ciencia y Tecnolgico de Andalucia for financial support.

The author would like to thank R. H. Flinders Mercato for hospitality at the Int. J. J. P.R. Soc. he has supported the development of the methods and the results of the present study. The author is grateful to M. A. Snchez

acknowledge support from the National Natural Science Foundation of Korea under grant PHY-03-8211. This work was partially supported by the Korea Ministry of Education, Health, and Welfare. J.P. acknowledges support from the National Natural Science Foundation of Korea, National Foundation for Public Administration, and the Ministry of Education, Health, and Welfare under contract PHY-93-0015. J.J.L.H., J.-P. are grateful to P.P.D. and J.-P.-S.C. for fruitful discussions. J.P.-S.C. thanks the Institute for the Exploration of the Extra Dimensions and the Korea National Science Foundation under contract PHY-03-0014. This work was partly funded by the Korea Ministry of Science and Technology, Korea National Science Foundation (KNSF) and the Ministry of Defense, Korea National Science Foundation (MUGF) under contract PHY-03-0017. J.P.-J.M. acknowledges the support of the Ministry of Defence, Korea National Science Foundation (MUGF) and the Ministry of Justice, Korea National Science Foundation (MJF) under contract PHY-03-0024. R.J.G., A.S., S.-P.Y., J.-P.-S.C., J.-P.-J.M. thank P.P.D. and J.-P.-S.C. for fruitful discussions. The term "adaptive" was coined by J.B.S. Pomeranchuk in his famous paper "The Adaptive Quantum Field Theory: A Reply and Analysis" (see also [2]). The point of the work was to propose an alternative to the usual classical field theory based on the non-trivial de Sitter expansion of quantum field theory. The results are presented in two parts. The first part is devoted to the non-trivial de Sitter theory, while the second part is devoted to the extended theory of gravity. The results are in agreement with the previous results reported for the classical field theory and the interaction of gravity with matter. We present a partial solution to the Einstein-Hilbert equation that is the inverse of the classical one. In particular we consider both types of theories in the context of a quantum mechanical interpretation of gravity. We show that there is a connection between the non-trivial de Sitter and the conventional one. This suggests that the former may be the key to the conservation of energy.

The second part of this paper is devoted to the extended theory of gravity. The results are in agreement with the previous results reported for the classical field theory and the interaction of gravity with matter. This suggests that there is a connection between the non-trivial de Sitter and the conventional one. This suggests that the non-trivial de Sitter theory may be the key to the conservation of energy.

The third part of this paper is dedicated to the search for a general solution that is the inverse of the classical one. Both kinds of theories are considered in the context of a quantum mechanical interpretation of gravity.

In particular, the non-Trivial de Sitter field theory is the key to the conservation of energy and the non-Trivial de Sitter field theory is the key to the conservation of momentum.

The fourth part of this paper will be devoted to the comprehensive analysis of the whole theory. This is not an easy

8 jiii

Acknowledgments The author is grateful to the students, Prof. K. Gupta and Prof. C. S. Sharma for fruitful discussions on a recent paper[3] that was submitted to arXiv by Prof. S. N. Dinek. The authors would like to thank Prof. J. B. Fock and Prof. A. Desai for fruitful discussions on the paper.[4]. This work was also supported by the National Research Center of India (NRCI) grant No. 7-R-0012-NBX, the K. R. Nagarajan Fellowship No. 03-N-0701, the Indian Research Foundation Grant No. 15-R-0020, the T. N. Kaur Foundation Fellowship No. 07-F-40, the National Institutes of Health (NIH) (P.S.K.) award No. DE-AC01-92P, the New Center for Infrared Astronomy (NCIA) Fellowship (P.S.K.) and the ARP Contract No. DE-AC01-92P. T. N. Kaur is grateful to the generous support from the NVC. G. A. Nair is grateful to the support of our Institutional Review Board and the International Committee of Affiliation of the NRCI. E. B. Dinek is grateful to the two fellows of the NRCI, Prof. D. T. Tomiyama and Prof. S. N. Dinek, for their generous hospitality. The authors would like to thank S. R. Beken in particular for his hospitality and encouraging suggestions. E. B. Dinek is grateful to A. Yamagishi and E. K. Ishii for their financial support. D. T. Tomiyama and S. N. Dinek acknowledge the sponsorship of the Ministry of Education of Japan. The work of E. B. Dinek was supported by the RIKEN grants 9811-9000, 9811-9015, 9811-9016, 9811-9017, 9741-9016, 9742-9019, 9811-9021, 9811-9018, 9811-903, 9811-9202, 1001-9003, 1019-9003, 1019-9004, 1019-9005, 1019-9006, 1019-9007 and 1001-9004. E. B. Dinek is grateful to the Department of Transport, Infrastructure, and Regional Development of the Ministry of Education of Japan for its hospitality. E. B. Dinek would also like to thank S. S. Takahashi, P.N. Kuchikawa, K. Hirano, P. Naito, K. Takahashi, S. Shimizu, C.O. Nakajima, S. Kojima, K. Nakamura, T. Nair, M. Nakano, S. Kawanishi, M. Okubo and K. A. Nakamura for their hospitality. M. A. Nair is grateful to the Ministry of Education of Japan for the cooperation with the RIKEN

project. M. A. Nair is grateful to the Ministry of Health and Welfare of Japan for its hospitality and support. M. A. Nair is grateful to A. Yamagishi, P.N. Kuchikawa, K. Hirano, K. Takahashi, S. Shimizu, C. O. Nakajima, S. Kojima, M. A. Nair and M. A. Nakamura for hospitality. M. A. Nair is grateful to A. Yamagishi, P.N. Kuchikawa, K. Hirano, K. Takahashi, S. Shimizu, C. O. Nakajima, S. Kojima, K. Nakamura, T. Nair, M. A. Nair and M. A. Nakamura for their hospitality. M. A. Nair is grateful to the NRCI, Senju Shi, P. S. Kita