

二宮正夫 最近の発表論文リスト

1. **Bosons being their own antiparticles in Dirac formulation**  
Holger B. Nielsen (Bohr Inst.), Masao Ninomiya (Okayama Inst. Quantum Phys.).  
Oct 13, 2015. 55 pp.  
OIQP-15-9  
e-Print: [arXiv:1510.03932 \[hep-th\]](https://arxiv.org/abs/1510.03932) | [PDF](#)
2. **A state description of pair production from Dirac sea in gravitational field --physical interpretation of Weyl anomaly--**  
Yoshinobu Habara (Okayama Inst. Quantum Phys.), Holger B. Nielsen (Bohr Inst.), Masao Ninomiya (Okayama Inst. Quantum Phys.).  
Mar 18, 2015. 23 pp.  
e-Print: [arXiv:1503.05340 \[hep-th\]](https://arxiv.org/abs/1503.05340) | [PDF](#)
3. **Deriving Veneziano Model in a Novel String Field Theory Solving String Theory by Liberating Right and Left Movers**  
Holger Bech Nielsen (Bohr Inst.), Masao Ninomiya (Okayama Inst. Quantum Phys.).  
Oct 4, 2014. 43 pp.  
Published in **Bled Workshops Phys. 15 (2014) no.2, 183-222**  
OIQP-14-10  
Conference: C14-07-20 Proceedings  
e-Print: [arXiv:1410.1048 \[hep-th\]](https://arxiv.org/abs/1410.1048) | [PDF](#)
4. **A new mechanism of realizing inflationary universe with recourse to backreaction of quantized free fields — Inflation without inflaton —**  
Yoshinobu Habara (Okayama Inst. Quantum Phys.), Hikaru Kawai (Kyoto U.), Masao Ninomiya (Okayama Inst. Quantum Phys.).  
Oct 2, 2014. 24 pp.  
Published in **JHEP 1502 (2015) 148**  
KUNS-2521, OIQP-14-9  
DOI: 10.1007/JHEP02(2015)148  
e-Print: [arXiv:1410.0644 \[hep-th\]](https://arxiv.org/abs/1410.0644) | [PDF](#)
5. **Our String Field Theory Liberating Left and Right Movers as Constituent 'Objects'**  
Holger B. Nielsen (Copenhagen U.), Masao Ninomiya (Okayama Inst. Quantum Phys.).  
Dec 2012. 22 pp.  
Published in **Bled Workshops Phys. 13 (2012) no.2, 127-149**  
OIQP-12-13  
Conference: C12-07-09.5 Proceedings

6. **A novel string field theory solving string theory by liberating left and right movers**  
Holger B. Nielsen (Bohr Inst.), Masao Ninomiya (Okayama Inst. Quantum Phys.).  
Nov 2012. 38 pp.  
Published in **JHEP 1405 (2014) 036**  
OIQP-12-10  
DOI: 10.1007/JHEP05(2014)036  
e-Print: [arXiv:1211.1454 \[hep-th\]](https://arxiv.org/abs/1211.1454) | [PDF](#)
7. **Physical Account of Weyl Anomaly from Dirac Sea**  
Y. Habara (Okayama Inst. Quantum Phys.), H.B. Nielsen (Bohr Inst.), M. Ninomiya (Okayama Inst. Quantum Phys.).  
Jun 2012. 21 pp.  
Published in Int.J.Mod.Phys. A30 (2015) no.25, 1550147  
OIQP-12-01  
DOI: 10.1142/S0217751X1550147X  
e-Print: [arXiv:1206.6076 \[hep-th\]](https://arxiv.org/abs/1206.6076) | [PDF](#)
8. **Possible origin of CMB temperature fluctuations: Vacuum fluctuations of Kaluza-Klein and string states during inflationary era**  
Yoshinobu Habara (Okayama Inst. Quantum Phys.), Hikaru Kawai (Kyoto U.), Masao Ninomiya (Okayama Inst. Quantum Phys.), Yasuhiro Sekino (KEK, Tsukuba). Oct 2011. 33 pp.  
Published in **Phys.Rev. D85 (2012) 104027**  
KEK-TH-1502, KUNS-2368, OIQP-11-10  
DOI: 10.1103/PhysRevD.85.104027  
e-Print: [arXiv:1110.5392 \[hep-th\]](https://arxiv.org/abs/1110.5392) | [PDF](#)
9. **An Idea of New String Field Theory - Liberating Right and Left Movers -**  
H.B. Nielsen (Bohr Inst.), M. Ninomiya (Okayama Inst. Quantum Phys.).  
Dec 2011. 21 pp.  
Published in Bled Workshops Phys. 12 (2011) no.2, 178-195  
Conference: C11-07-11.4 Proceedings  
e-Print: [arXiv:1112.0542 \[hep-th\]](https://arxiv.org/abs/1112.0542) | [PDF](#)
10. **Possible origin of CMB temperature fluctuations: Vacuum fluctuations of Kaluza-Klein and string states during inflationary era**  
Yoshinobu Habara (Okayama Inst. Quantum Phys.), Hikaru Kawai (Kyoto U.), Masao Ninomiya (Okayama Inst. Quantum Phys.), Yasuhiro Sekino (KEK, Tsukuba).  
Oct 2011. 33 pp.  
Published in Phys.Rev. D85 (2012) 104027  
KEK-TH-1502, KUNS-2368, OIQP-11-10  
DOI: 10.1103/PhysRevD.85.104027

e-Print: [arXiv:1110.5392](https://arxiv.org/abs/1110.5392) [hep-th] | PDF

#### 11. CMB Fluctuations and String Compactification Scales

Yoshinobu Habara (Kinki U., Osaka & Okayama Inst. Quantum Phys.), Hikaru Kawai (Kyoto U. & Nishina Ctr., RIKEN), Masao Ninomiya (Okayama Inst. Quantum Phys. & Nishina Ctr., RIKEN), Yasuhiro Sekino (Okayama Inst. Quantum Phys.). Mar 2011. 4 pp.

Published in **Phys.Lett. B707 (2012) 198-202**

KUNS-2322, OIQP-11-02, RIKEN-TH-197

DOI: [10.1016/j.physletb.2011.12.018](https://doi.org/10.1016/j.physletb.2011.12.018)

e-Print: [arXiv:1103.0299](https://arxiv.org/abs/1103.0299) [hep-th] | PDF

### 最近の論文リスト

近年の関心：

- (1) 関野恭弘氏他 2 名と共同で素粒子論的宇宙論を研究している。特に Cosmic Microwave Background (CMB)の詳細な解析結果がプランク衛星グループから報告されて以降、宇宙の初期状態を記すインフレーション理論を場の量子論と超弦理論を応用して研究している。
- (2) 超弦理論にホルガー・B・ニールセンと多大の関心をもって研究している。弦の場の理論はまだまだ発展途上にあり、多くの難問が残っている。2000 年以降の研究の進展を調べつつ、我々独自のモデルを提唱し、日本の中堅研究者をメンバーに迎えて研究を進めている。