

研究発表

原著論文

- 1. T.Neff, H.Feldmeier, W. Horiuchi,
"Short-range correlations in nuclei with similarity renormalization group transformations",
Phys. Rev. C 92, 024003-1-12 (2015)*.
- 2. H.Matsubara, A.Tamii, H.Nakada, T.Adachi, J.Carter, M.Dozone, H.Fujita, K.Fujita, Y. Fujita, N. Fujita, K. Hatanaka, W. Horiuchi (他25名),
"Nonquenched Isoscalar Spin-M1 Excitations in sd-Shell Nuclei",
Phys.Rev.Lett.115,102501-1-6 (2015)*.
- 3. H.Homma, M.Isaka, M.Kimura,
"Parity reversal of $^{12}\Lambda\text{Be}$ "
Phys.Rev.C91,014314 (2015)*.
- 4. M. Isaka, M. Kimura, E. Hiyama, H.Sagawa,
"Superdeformation of Ar hypernuclei",
Prog. Theor. Exp. Phys. 2015, 103D02 (2015)*.
- 5. M.Isaka and M.Kimura,
"Impurity effects of the Λ particle on the 2α cluster states of ^9Be and ^{10}Be "
Phys. Rev. C 92, 044326 (2015)*.
- 6. M. Lyu, Z. Ren, B. Zhou, et al.,
"Investigation of ^9Be from a nonlocalized clustering concept",
Phys. Rev. C 91, 014313 (2015)*.
- 7. Chang Xu, Zhongzhou Ren et al.,
" α -decay width of ^{212}Po from a quartetting wave function approach"
Phys. Rev. C 93, 011306(R) (2015)*
- 8. B. Zhou, Z.Ren,
"Nonlocalized clustering in nuclear cluster physics",
Progress In Physics, 35, 3 (2015)*.
- 9. B. Zhou, Z. Ren.
"Clustering in nuclei."
Physics, 44, 5 (2015)*.
- 10. Y. Chiba and M. Kimura,
"Cluster states and Isoscalar monopole transitions of ^{24}Mg ",
Phys. Rev. C 91, 061302(R) (2015)*.
- 11. S. Ebata and M. Kimura,
"Low-lying 2^+ states generated by pn-quadrupole correlation and $N = 28$ shell

quenching",
Phys. Rev. C 91, 014309 (2015)*.

会議抄録等

- S. Terashima, I. Tanihata, R. Kanungo, A. Estrade, W. Horiuchi, F. Ameil, J. Atkinson, Y. Ayyad, D. Cortina-Gil, I. Dillmann, A. Evdokimov, F. Farinon, H. Geissel, G. Guastalla, M. Kimura (他21名),
"Proton radius of ^{14}Be from measurement of charge changing cross sections",
JPS Conf. Proc., Vol. 6, 020027-1-7 (2015)*.
- 2. T. Neff, H. Feldmeier, W. Horiuchi, D. Weber,
"Studying short-range correlations and momentum distributions with unitarily transformed interactions and operators",
JPS Conf. Proc., Vol. 6, 030058-1-4 (2015)*.
- 3. W. Horiuchi, T. Inakura, T. Nakatsukasa, Y. Suzuki,
"Systematic analysis of total reaction cross sections of unstable nuclei with Glauber model"
JPS Conf. Proc., Vol. 6, 030079-1-4 (2015)*.
- 4. W. Horiuchi, Y. Suzuki, T. Inakura,
"Probing neutron-skin thickness of unstable nuclei with total reaction cross sections",
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- 5. Y. Kanada-En'yo, M. Kimura, F. Kobayashi, T. Suhara, Y. Taniguchi, Y. Yoshida,
"Cluster Phenomena in Stable and Unstable Nuclei"
JPS Conf. Proc., Vol. 6, 010002 (2015)*.
- 6. S. Watanabe, K. Minomo, M. Shimada, S. Tagami, M. Kimura, M. Takechi, M. Fukuda, D. Nishimura, T. Suzuki, T. Matsumoto, Y. R. Shimizu, M. Yahiro,
"Ground-State Properties of Mg Isotopes in and Beyond the Island of Inversion through Reaction Cross Sections",
JPS Conf. Proc. 020024 (2015)*.
- 7. M. Kimura, Y. Taniguchi, Y. Kanada-En'yo
"Erosion of $N = 28$ Shell Gap and Triple Shape Coexistence in the Vicinity of ^{44}S "
JPS Conf. Proc. 020025 (2015)*.
- 8. A. Sarsembayeva, S. Imai, S. Ebata, M. Chiba, K. Kat?, N. Otuka, M. Aikawa.
"Upgrade of Japanese editor for EXFOR compilation."
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- 9. D. Ichinkhorloo, M. Aikawa, S. Chiba, Y. Hirabayashi, K. Kato,
"The scattering cross sections for $^7\text{Li} + n$ reactions"
Proceedings of the Sixth AASPP Workshop on Asian Nuclear Reaction Database Development, INDC(JPN)-0200 Distr. NC, 34 (2015).
- 10. B.Zhou, Y.Funaki et al.,
"The container picture with two-alpha correlation for the ground state of ^{12}C ",

IAEA Proceedings of the Sixth Workshop on Asian Nuclear Reaction Database Development.

- 11. S. Hatakeyama, S. Ebata, W. Horiuchi, M. Kimura,
"Multiple-Scattering Effects in High Energy Nucleus-Nucleus Collisions with Glauber Theory,
JPS Conf. Proc. 030096 (2015)*
- 12. T. Baba, Y. Chiba, M. Kimura,
"Linear Chain of Alpha Cluster in ^{16}C ",
JPS Conf. Proc. 030030 (2015)*.
- 13. Y. Chiba, M. Kimura,
"Collectivity and Instability of the $N = Z = 28$ Shell Gap in ^{56}Ni "
JPS Conf. Proc. 030047 (2015)*.
- 14. S. Ebata, M. Kimura,
"Quenching of $N = 28$ Shell Gap and a Low-Lying Quadrupole Mode in the Vicinity of Neutron-Rich $N = 28$ Isotones",
JPS Conf. Proc. 030093 (2015)*.

学術講演 (国際学会・国際シンポジウム)

招待公演(口頭発表)

- ? International Molecule-type Workshop "Structure and reaction of light exotic nuclei",
YITP Kyoto University, Kyoto, Japan, 2015.1.6-23.
W. Horiuchi, "Electric dipole response of ^6He : Halo-neutron and core excitations"
- ? The 2nd International Workshop & 12th RIBF Discussion on Neutron-Proton Correlations,
The University of Hong Kong, Hong Kong, China, 2015.7.6-9.
W. Horiuchi, "Neutron-proton correlations in ^4He "
- ? The long term workshop "Computational Advances in Nuclear and Hadron Physics" (CANHP2015),
YITP, Kyoto University, Kyoto, Japan, 2015.9.21-10.30.
W. Horiuchi, "Harmonic-oscillator excitations of precise few-body wave functions"
- ? 新学術領域研究「ニュートリノフロンティアの融合と進化」研究会
ニューウェルシティー湯河原, 熱海, 2015.12.1-3.
W. Horiuchi, "Ab initio few-body approach to neutrino-nucleus reactions"
- ? The Second Myanmar-Japan Symposium,
Patheingyi University, Myanmar, 2015.12.5-6.
W. Horiuchi, "Precise Solution of Few-Body Systems with Correlated Gaussian Method"
- ? Gordon Research Conference Nuclear Chemistry,
Colby-Sawyer College, New Hampshire, USA, 2015.6.2

M. Kimura, "Exotic Nuclear Clustering near the Neutron Drip-Line Studied by Antisymmetrized Molecular Dynamics"

- ? The 9th Japan-China Joint Nuclear Physics Symposium, Osaka University, 2015.11.7-12
- B. Zhou, "Container picture for cluster structures of ^{12}C "

一般公演(口頭発表)

- ? The 21st International Conference on Few-Body Problems in Physics (FB21), Crowne Plaza Chicago Metro Downtown Hotel, Chicago, IL, USA, 2015.5.18-22.
 - ? W. Horiuchi, Y. Suzuki, "Five-body calculation with Pauli constraint for shell- and cluster-structure in ^{16}O "
 - ? R. Sekine, W. Horiuchi, "Solving time-dependent few-body Schrodinger equation with basis expansion method"
- ? Hokkaido workshop on many-nucleon correlations and clustering, Hokkaido University, Sapporo, Japan, 2015.8.27-28.
 - ? W. Horiuchi and Y. Suzuki, "Five-body calculation for ^{16}O "
 - ? B. Zhou, "The cluster structures of ground and excited 0^+ states of ^{12}C "
 - T. Hoshino, S. Ohnishi, W. Horiuchi, "Three-body calculation for pnK^- atomic states"
 - ? Y. Chiba, M. Kimura, "Clustering and isoscalar monopole excitation of ^{24}Mg "
 - ? S. Hatakeyama, W. Horiuchi, S. Ebata, M. Kimura, "Study of high energy nuclear reactions with Glauber theory"
 - ? R. Sekine, W. Horiuchi, "Time-dependent approach to electric dipole response of few-nucleon systems"
 - ? T. Baba, Y. Chiba, M. Kimura, "Linear-chain structure in Carbon isotopes"
 - ? M. Kimura, "Triaxial deformation and Octupole mode of ^{44}Ti superdeformed state"
- ? International Symposium on High Spectroscopy & Tensor Interactions (HST15), Osaka, Japan, 2015.11.16-19.
 - ? M. Kimura, "Nuclear response functions and clustering aspects studied by Antisymmetrized Molecular Dynamics"
 - ? W. Horiuchi, "Tensor correlations in ^4He "
- ? The 6th Asian Nuclear Reaction Database Development Workshop, Hokkaido University, Sapporo, Japan, 2015.9.15-17.
 - ? A. Sarsembayeva, S. Imai, S. Ebata, M. Chiba, K. Kat?, N. Otuka, M. Aikawa. "Upgrade of Japanese editor for EXFOR compilation."
 - ? D. Ichinkhorloo, "The scattering cross sections for $^7\text{Li} + n$ reactions"
- ? The 5th International Workshop on Compound-Nuclear Reactions and Related Topics, Tokyo Institute of Technology, Tokyo, Japan, 2015.10.19-23.
 - D. Ichinkhorloo, "The scattering cross sections for $^6, ^7\text{Li} + n$ reactions"

- ? The 12th International Conference on Hypernuclear and Strange Particle Physics (HYP2015), Sendai, Japan 2015.9.7-12.
S. Ohnishi, Y. Ikeda, T. Hyodo, E. Hiyama, W. Weise, "Signature of $\Lambda(1405)$ in $K-dn \rightarrow \Sigma n$ reaction"
- ? Frontiers in hadron and nuclear physics with strangeness and charm, ECT*, Trento, Italy 2015.10.19-23.
S. Ohnishi, Y. Ikeda, T. Hyodo, E. Hiyama, W. Weise, " $\Lambda(1405)$ resonance and the $K-d \rightarrow n \Sigma n$ reaction"
- ? Clusters in Nuclear Systems, Rostock, Germany, 2015.8.4-7.
B. Zhou, "The cluster structures of ground and excited 0^+ states of ^{12}C "
- ? SNP school 2015, Tohoku University, Sendai, Japan, 2015.09.03-05.
T. Hoshino, S. Ohnishi, W. Horiuchi, "Three-body calculation with correlated Gaussian method for pnK^- system"
- ? Computational Advances in Nuclear and Hadron Physics (CANHP 2015), YITP, Kyoto, Japan, 2015.09.21-10.30.

? Y. Chiba, M. Kimura, "Parity-asymmetric cluster structure and IS excitation of ^{28}Si "
? R. Sekine, W. Horiuchi, "Time-dependent nuclear response of few-nucleon systems"
? T. Hoshino, S. Ohnishi, W. Horiuchi, "Three-body calculation for Kaonic deuterium"
? M. Kimura, "Electric dipole response of ^{26}Ne and nature of pygmy resonance"
- ? International Molecule-type Workshop "Structure and reaction of light exotic nuclei", YITP Kyoto University, Kyoto, Japan, 2015.1.6-23.
Y. Chiba, M. Kimura, "Cluster excitations in $N=Z$ nuclei"
- ? International mini-workshop on alpha condensates and monopole excitations, RCNP, Ibaraki, Japan, 2015.9
Y. Chiba, M. Kimura, "Cluster and Isoscalar excitations of ^{24}Mg and ^{28}Si "
M. Kimura, "monopole strength and clustering; a research plan"

一般公演(ポスター発表)

- ? Quarks to Universe in Computational Science (QUCS2015), Nara, Japan, 2015.11.4-8.
S. Ohnishi, Y. Ikeda, T. Hyodo, W. Weise, "Signature of $\Lambda(1405)$ in $d(K^-, n)$ reaction"

学術講演 (国内学会・国内その他)

招待公演(口頭発表)

- ? 九大研究会「中性子過剰領域における弱束縛系の物理」九州大学, 福岡, 2015.3.9-10.
堀内渉, 「全反応断面積で探る不安定核の半径とスキン厚」
- ? 日本物理学会2015 年秋季大会, 大阪市立大学杉本キャンパス, 2015.9.25-28.
堀内渉, 「ヘリウム同位体の励起と核子相関」(シンポジウム講演)
- ? K中間子原子核の今後を考える会, 岐阜大学, 岐阜, 日本, 2015.11.28.
大西祥太, 池田陽一, 兵藤哲雄, W.Weise, “ $\Lambda(1405)$ resonance and the $K-d \rightarrow n\Sigma n$ reaction”

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- ? 日本物理学会第70 回年次大会, 早稲田大学早稲田キャンパス, 2015.3.21-24.

? 村田和也, 堀内渉, 鈴木宜之, 佐藤透, 低エネルギー領域におけるニュートリノ 4He 反応

? 千葉陽平, 木村真明, アイソスカラー型単極子励起で生成される 28Si のクラスター状態

? 畠山慎也, 堀内渉, 「Glauber理論を用いた変形原子核の陽子弾性散乱の研究」

? 関根里英, 堀内渉, 「時間依存の方法による少数核子系の電気双極子応答」

? 馬場智之, 千葉陽平, 木村真明, 炭素同位体における直鎖クラスター構造の系統的解析

? 木村真明, 「 $A \sim 40$ 核の超変形・ハイパー変形状態とクラスター相関」

- ? 日本物理学会2015 年秋季大会, 大阪市立大学杉本キャンパス, 2015.9.25-28.

堀内渉, 江幡修一郎, 畠山慎也, 鈴木宜之, 「全反応断面積を用いた重い原子核の中性子スキン厚の導出」

村田和也, 堀内渉, 佐藤透, 中村聡, 「原子核強度関数計算における最大エントロピー法の有効性」

大西祥太, 池田陽一, 兵藤哲雄, 肥山詠美子, Wolfram Weise, 「 $K-d \rightarrow n\Sigma n$ 反応における $\Lambda(1405)$ 共鳴の研究」

星野翼, 大西祥太, 堀内渉, 「三体模型による pnK^{Λ} -原子状態の研究」

千葉陽平, 木村真明, 「 28Si のパリティ非対称クラスターとアイソスカラー型単極/双極励起強度」

関根里英, 堀内渉, 「時間依存法による4核子系の電気双極子応答の研究」

馬場智之, 千葉陽平, 木村真明, 14C , 16C における直鎖クラスター状態のアルファ崩壊幅

- ? ストレンジネス核物理の発展方向, J-PARC, 東海, 日本, 2015.8.3-7.

大西祥太, 池田陽一, 兵藤哲雄, 肥山詠美子, Wolfram Weise, 「Faddeev方程式による $\Lambda(1405)$ 共鳴生成反応の研究」

- ? 新学術領域「実験と観測で解き明かす中性子星の核物質」第4回研究会, 湘南国際村センター, 葉山, 日本, 2015.9.17-18.

大西祥太, 池田陽一, 兵藤哲雄, 肥山詠美子, Wolfram Weise, “Production Reaction of $\Lambda(1405)$ from Faddeev Equations”

- ? RCNP研究会「アイソスカラー型単極遷移で探る原子核の励起状態とクラスター構造」, 阪大RCNP, 2015.07-16-17

? 千葉陽平, 木村真明, 「 $24\text{Mg}/28\text{Si}$ のクラスター構造とアイソスカラー型遷移」

- ? 馬場智之, 千葉陽平, 木村真明, 「炭素同位体における直鎖クラスター構造」
- ? B. Zhou, "The cluster structures of ground and excited 0^+ states of ^{12}C "
- ? 第61回 原子核三者若手夏の学校, ホテルたつき, 愛知, 2015.8.17-21.

- 星野翼, 大西祥大, 堀内渉, 「三体模型による pnK^- -原子状態の研究」
- 畠山慎也, 堀内渉, 江幡修一郎, 「Glauber理論を用いた変形原子核散乱の研究」
- 千葉陽平, 「 ^{28}Si におけるクラスター構造とアイソスカラー型遷移」
- ? 第28回 北海道原子核理論グループ研究会, 北海道大学, 札幌, 2015.11.25-27.

? T. Hoshino, S. Ohnishi, W. Horiuchi, "Three-body calculation for 1s level shift of Kaonic deuterium".

? S. Hatakeyama, W. Horiuchi, "Analysis of proton-nucleus inelastic scattering with Glauber theory."

? R. Sekine, W. Horiuchi, "Time-dependent Approach to the electric dipole response of few-nucleon systems"

? Y. Chiba, M. Kimura, "Selective excitation of parity-asymmetric clusters of ^{28}Si by isoscalar monopole/dipole transitions"

? T. Baba, M. Kimura "Alpha decay width of linear-chain state in ^{14}C "

一般公演(ポスター発表)

- ? 2015 Symposium on Nuclear Data, Ibaraki Quantum Beam Research Center, Tokai, Japan 2015.11.19-20.
A. Sarsembayeva, S. Imai, S. Ebata, M. Chiba, K. Kat?, N. Otuka, M. Aikawa.
"Current status in development of new EXFOR editor."

国際学会及び国際シンポジウムの組織

- 1. 堀内渉(Co-organizer), International Molecule-type Workshop "Structure and reaction of light exotic nuclei" 2015.1.6-23.
- 2. 木村真明 (主催者) "Hokkaido workshop on many nucleons correlations and clustering", 2015.8.27-28, Sapporo, Japan.
- 3. 木村真明 (組織委員) "International Symposium Frontier of Gamma-ray Spectroscopy", 2015.10.1-3, Osaka, Japan.
- 4. 木村真明 (組織委員) "The 9th Japan-China Joint Nuclear Physics Symposium", 2015.11. 7-12, Osaka, Japan.
- 5. A. Sarsembayeva, B. Zhou, "The 6th Asian Nuclear Reaction Database Development Workshop", Hokkaido Univ. Sapporo, Japan, 2015.9.15-17 -

在外研究

該当なし

科研費・助成費の取得状況

- 1. 木村真明, 基盤研究C H25-H27, “ドリップライン近傍での変形共存と新しいタイプの中性子ハローの研究”,
研究代表者800千円.
- 2. 木村真明, 新学術領域研究H24-H28, “中性子星と核物質の理論研究”,
研究分担者4200千円
- 3. 堀内渉, 若手研究B H25-H27, “第一原理計算を用いた不安定核・宇宙核反応の研究”,
代表者600千円
- 4. 堀内渉, 基盤研究C H27-H29, “酸素16生成の鍵-炭素12 + α 閾値近傍状態の構造研究-”
研究分担者700千円

その他

- 1. 木村真明, 大阪大学核物理研究センター 研究計画検討専門委員会委員.
- 2. 木村真明, 京都大学基礎物理学研究所 共同利用運営委員.
- 3. 木村真明, 理化学研究所 RIBFユーザーグループ委員.
- 4. 木村真明, 日本物理学会 理論核物理領域 運営委員.
- 5. 堀内渉, 北海道大学研究総長賞奨励賞(2015年3月11日)
- 6. 堀内渉, 原子核三者若手夏の学校2015原子核パート講師 (8月17-21日, ホテルたつき, 愛知) 「量子力学的少数体手法による核子多体問題」