

## 令和元年度 日本歯科大学新潟短期大学 活動報告

(令和2年3月31日現在)

氏名 渡辺 みのり

### 1. 研究テーマ

1. Belle II 実験のための分散コンピューティングシステムの研究  
(R&D of distributed computing system for Belle II experiment)
2. Belle II 実験のための崩壊点検出器の研究  
(The research and development of silicon vertex detector for Belle II)
3. Belle 実験における稀崩壊過程の研究  
(The study of rare decay at Belle)
4. 原子炉ニュートリノ検出器の開発  
(The development of reactor neutrino monitor)
5. 機能性プラスチックシンチレータの開発  
(The development of functional plastic scintillator)

### 2. 今年度の研究計画

- (1) Belle II 実験のための分散コンピューティングシステムの研究
- (2) Belle II 実験のための崩壊点検出器の研究
- (3) Belle 実験における稀崩壊過程の研究
- (4) 原子炉ニュートリノ検出器の開発
- (5) 日本学術振興会科学研究費補助金 若手研究 (B)継続  
B・Li 含有プラスチックシンチレータの開発と中性子位置検出器への応用  
(課題番号:17K18316), 渡辺みのり

### 3. 対外活動

- 1) 他大学での講義
  - (1) 日本歯科大学新潟生命歯学部における講義
    - (a) 熱と物質の物理学, および, 基礎科学補講 I, 第1学年
    - (b) 原子核と放射線, 第2学年
  - (2) 日本歯科大学新潟生命歯学部における学生実習
    - (a) 情報科学の実習, 第1学年
    - (b) 歯科入門実習, 第1学年
- 2) 学会活動 (査読, 理事, 評議委員など)  
記載事項なし

3) 公的な委員会等  
記載事項なし

4. 研究業績

A. 著書

記載事項なし

B. 原著

1. Casarosa G, (Belle II SVD collaboration), **Watanabe M (91th)** (98 authors). Commissioning of the Belle II Silicon Vertex Detector. ☆©Nucl.Instrum.Meth. A. 2020; 958: 162184-1-4. doi : 10.1016/j.nima.2019.05.025.
2. Pal B, (Belle Collaboration), **Watanabe M (165th)** (175 authors). Evidence for the decay  $B^0 \rightarrow pp^- \pi^0$ . ☆©Phys.Rev. D. 2019; 99: 091104-1-8. doi : 10.1103/PhysRevD.99.091104.
3. Bhardwaj V, Jia S, (Belle Collaboration), **Watanabe M (182th)** (193 authors). Search for  $X(3872)$  and  $X(3915)$  decay into  $\chi c 1 \pi^0$  in  $B$  decays at Belle. ☆©Phys.Rev. D. 2019; 11: 111101-1-8. doi : 10.1103/PhysRevD.99.111101.
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readout system. ☆© Nucl.Instrum.Meth. A. 2020; 958: 162942–1–5.  
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9. Li H, Vossen A, (Belle Collaboration), **Watanabe M (121th)** (128 authors). Azimuthal asymmetries of back-to-back  $\pi^\pm - (\pi^0, \eta, \pi^\pm)$  pairs in  $e^+e^-$  annihilation. ☆©Phys.Rev. D. 2019; 100: 092008–1–21. doi : 10.1103/PhysRevD.100.092008.
10. Abudinén F, Adachi I, Ahlburg P, Aihara H, Akopov N, Aloisio A, **Watanabe M (394th)** (422 authors). Measurement of the integrated luminosity of the Phase 2 data of the Belle II experiment. ☆©Chin. Phys C. 2019; 41: 021001–1–12. doi : 10.1088/1674-1137/44/2/021001.
11. Li Y, Li Y. B, Shen C. P, (Belle Collaboration), **Watanabe M (165th)** (175 authors). Measurements of the Branching Fractions ( $B \rightarrow \Lambda^- - c \Xi' (0c)$ ), ( $B \rightarrow \Lambda^- - c \Xi c(2645)0$ ) and ( $B \rightarrow \Lambda^- - c \Xi c(2790)0$ ). ☆©Phys.Rev. D. 2019; 100: 112010–1–8. doi : 10.1103/PhysRevD.100.112010.
12. Jia S, Shen C. P, Yuan C. Z, Wang X. L, (Belle Collaboration), **Watanabe M (165th)** (173 authors). Observation of a vector charmoniumlike state in  $e^+e^- \rightarrow D^+ s D_s 1(2536)^- + c.c..$  ☆©Phys.Rev. D. 2019; 100: 111103–1–8. doi : 10.1103/PhysRevD.100.111103.
13. Saito E, Miyata H, Katsumata M, Karasawa Y, Koike T, Ono H, **Watanabe M (7th)** (11 authors). Light yield, long-term stability, and attenuation length of a new plastic scintillator cured at room temperature. ☆©Nucl.Instrum.Meth. A. 2020; 953: 162885–1–8. doi : 10.1016/j.nima.2019.162885.
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C. 解説・総説

記載事項なし

D. 報告・紀要

記載事項なし

E. 翻訳

記載事項なし

F. 学術大会(口演・ポスター発表)・講演会・研究会・研修会等での講演

1. Eisuke Saito, Hitoshi Miyata, Takuro Koike, Yuhi Sonobe, Keito Toda, Yukito Fujima, Hiroaki Ono, Minori Watanabe, Makoto Sato, Akinori Umeyama, Masaaki Tamura, Takahito Suzuki. Improvement of long-term stability of newly developed plastic scintillator for practical use. MBE10, 奈良市, 2019年6月25日
2. Eisuke Saito, Hitoshi Miyata, Takuro Koike, Yuhi Sonobe, Keito Toda, Yukito Fujima, Hiroaki Ono, Minori Watanabe, Makoto Sato, Akinori Umeyama, Masaaki Tamura, Takahito Suzuki. Improvement of long-term stability of newly developed plastic scintillator for practical use. 21st SPVM National Physics Conference, フィリピン マニラ 市, 2019年10月17日

G. 特別講演・シンポジウム講演

記載事項なし