

●物理学 Physics

1. 所属構成員等

准教授 小野裕明
講師 渡辺みのり(兼任)

2. 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. ILC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 ILC experiment
3. ILC実験のためのカロリメータ検出器開発研究 R&D of calorimeter detector for ILC experiment
4. 原子炉ニュートリノ検出器の開発 Development of reactor neutron monitor
5. 常温硬化プラスチックシンチレータの開発 Development of plastic scintillator cured at room temperature

3. 今年度の研究上の特筆すべき事項

学会賞

記載事項なし

特許

記載事項なし

4. 学位取得者

記載事項なし

5. 主催学会等

記載事項なし

6. 国際交流状況

1. 新潟大学と共同でフィリピンミンダナオ州立大学イリガン工科校との共同研究を行なっている。
2. 国際リニアコライダー(ILC)実験のILD検出器グループ・CALICEグループに参加し、国際共同研究を行なっている。特にILDソフトウェアグループではシミュレーションデータ生成の共同責任者としての役割を担っている。
3. 国際共同実験Belle/Belle IIグループに参加し、DIRACシステムを用いたシミュレーションデータ生成のための計算資源の提供・管理、コンピューティンググループのエキスパートとしてデータ生成モニタリングの役割を担っている。

7. 外部研究費

1. 科学研究費補助金, 若手研究B, (新規), 2020-2022年度, 常温硬化樹脂を用いた大面積薄膜プラスチックシンチレータによる α 線検出器開発, 渡辺みのり(代表), 1820000円
2. 科学研究費補助金, 基盤研究C, (継続), 2019-2022年度, 常温硬化プラスチックシンチレータの基本性能向上と高機能化に向けた研究, 小野裕明(代表), 1560000円

8. 研究業績

A. 著書

記載事項なし

B. 原著

1. Thalmeier R, (Belle II SVD Collaboration), Watanabe M (89th) (96 authors). Series production testing and commissioning of the Belle II SVD readout system. ☆©Nucl.Instrum.Meth. A. 2020; 958: 162942-1-162942-5. doi : 10.1016/j.nima.2019.162942.
2. Casarosa G, (Belle II SVD Collaboration), Watanabe M (90th) (97 authors). Commissioning of the Belle II Silicon Vertex Detector. ☆©Nucl.Instrum.Meth. A. 2020; 958: 162184-1-162184-4. doi : 10.1016/j.nima.2019.05.025.
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4. Abudinén F, Adachi I, Adak R, Adamczyk K, Ahlburg P, (Belle II Collaboration), Ono H, Watanabe M (349, 498th) (535 authors). Measurement of the branching fraction $B^0 \rightarrow D^{*+} \ell^- \nu \ell$ with early Belle II data. ◇arXiv. 2020; 1-17. doi : arXiv:2004.09066.
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6. Abudinén F, Adachi I, Adak R, Adamczyk K, Ahlburg P, (Belle II Collaboration), Ono H, Watanabe M (350, 499th) (536 authors). Measurement of the B^0 lifetime using fully reconstructed hadronic decays in the 2019 Belle II dataset. ◇arXiv. 2020; 1-16. doi : arXiv:2005.07507.
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8. Abudinén F, Adachi I, Adak R, Adamczyk K, Ahlburg P, (Belle II Collaboration), Ono H, Watanabe M (349, 498th) (535 authors). Charmless B decay reconstruction in 2019 Belle II data. ◇arXiv. 2020; 1-17. doi : arXiv:2005.13559 .
9. Ku Y, Chang P, (Belle Collaboration), Ono H, Watanabe M (93, 148th) (155 authors). Search for B^0 decays to invisible final states ($+ \gamma$) at Belle. ☆©Phys. Rev. D. 2020; 102: 012003-1-012003-9. doi : 10.1103/PhysRevD.102.012003.
10. Teramoto Y, Uehara S, Masuda M, (Belle Collaboration), Ono H, Watanabe M (135, 198th) (209 authors). Evidence for $X(3872) \rightarrow J/\psi \pi^+ \pi^-$ produced in single-tag two-photon interactions. ◇arXiv. 2020; 1-8. doi : arXiv:2007.05696.
11. Moon T. J, Tanida K, Kato Y, Kim S. K, (Belle Collaboration), Ono H (130th) (204 authors). First Determination of the Spin and Parity of a Charmed-Strange Baryon, $\Xi_c(2970)^+$. ◇arXiv. 2020; 1-15. doi : arXiv:2007.14700.
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22. Abudinén F, Adachi I, Adak R, Adamczyk K, Ahlburg P, (Belle II Collaboration), Ono H, Watanabe M (354, 509th) (546 authors). Measurements of branching fractions and CP-violating charge asymmetries in charmless B decays reconstructed in 2019–2020 Belle II data. $\diamond$ arXiv. 2020; 1–33. doi : arXiv:2009.09452.
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C. 解説・総説

記載事項なし

D. 報告・紀要

特記事項なし

E. 翻訳

特記事項なし

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. Hiroaki Ono. Expert shift summary. 36th Belle II general meeting, WEB開催, 2020年6月23日
2. Hiroaki Ono. Status of new 250 GeV MC production. Seasonal ILC detector meeting, WEB開催, 2020年9月9日
3. 斎藤栄輔, 松井達滉, 宮田等, 園部雄飛, 戸田湊斗(新潟大), 小野裕明, 渡辺みのり(日本歯科大), 佐藤誠, 梅山晃典(カーリットホールディングス), 田村正明(日本カーリット). 原子炉モニターのための遅延同時係数法を用いた粒子線検出. 電子情報通信学会信越支部会, WEB開催, 2020年9月26日
4. Saito E, Miyata H, Sonobe Y, Toda K, Ono H, Watanabe M, Sato M, Umeyama A, Tamura M, Suzuki T. Radiation detection for nuclear reactor monitor with delayed coincidence method. 22nd SPVM National Physics Conference, WEB開催, 2020年10月24日
5. Hiroaki Ono. Operation summary. 37th Belle II general meeting, WEB開催, 2020年11月4日
6. Hiroaki Ono. Status 250 GeV MC production. Seasonal ILC detector meeting, WEB開催, 2020年12月10日

8-G 講演

1) 特別講演・シンポジウム等での講演

1. 小野裕明. ILCが切り拓く測定器技術応用. 日本物理学会 秋季大会, シンポジウム講演, WEB開催, 2020年9月15日