

DOI の最近の話題

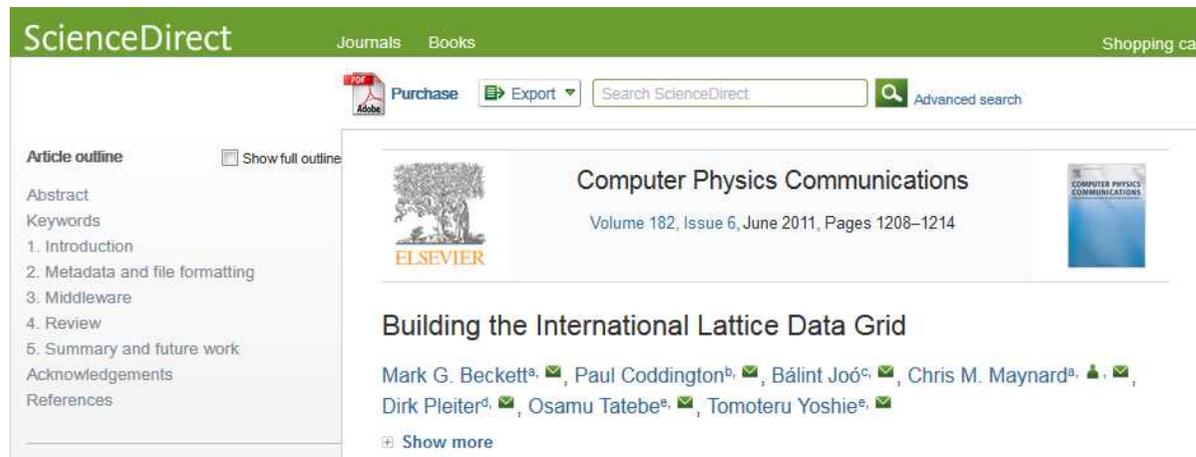
2015/10/09 T.Yoshie @ Journal Club

1. DOIとは
2. DOIの必要性と組織
3. DOIの利用とサービス
4. DOIと素粒子物理
5. Lattice QCD ensemble へのDOI付与

ref: <https://japanlinkcenter.org/top> 他

DOIとは

- DOI (Digital Object Identifier)
 - コンテンツの電子データに付与される国際的な識別子 (ISOにより標準化された規格)
 - 電子データ: 学術論文, 書籍(自身,章,図), 映像(TV番組, DVD) 等: 研究データへのDOI付与
 - DOIの例 [10.1016/j.cpc.2011.01.027](https://doi.org/10.1016/j.cpc.2011.01.027)
 - **prefix:** 10.から始まるコンテンツ発行者固有の番号
 - **suffix:** 発行者が決定するコンテンツの番号
 - **URLとして機能** <http://doi.org/10.1016/j.cpc.2011.01.027>



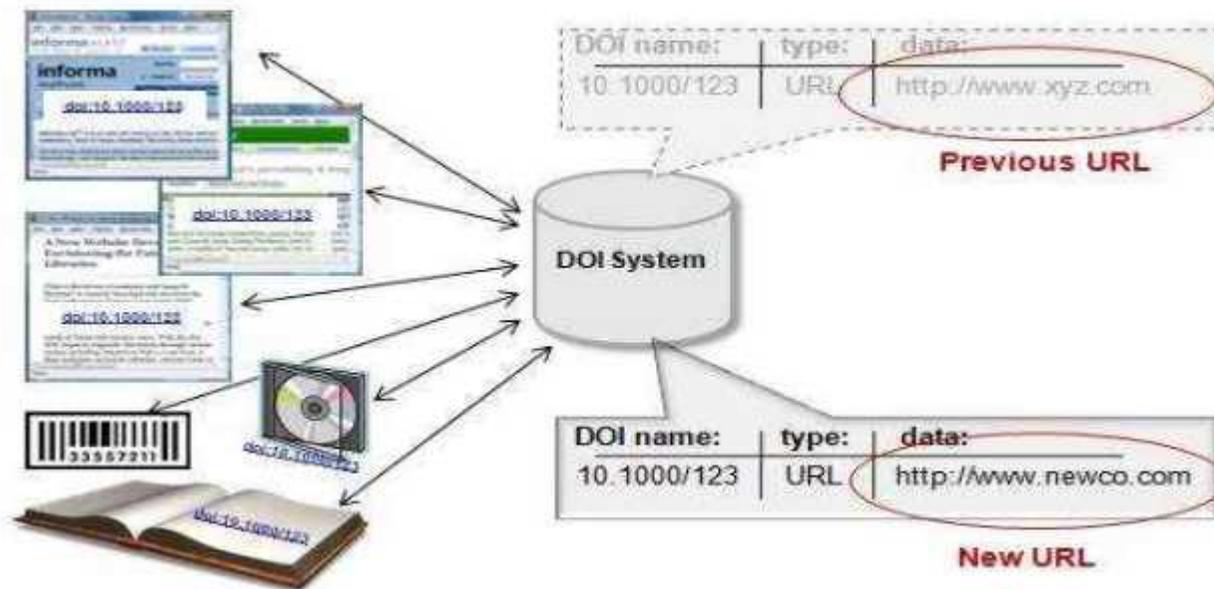
The screenshot shows the ScienceDirect website interface. At the top, there's a green navigation bar with 'ScienceDirect', 'Journals', 'Books', and 'Shopping cart'. Below this, there are links for 'Purchase' (with a PDF icon) and 'Export', along with a search bar for 'Search ScienceDirect' and an 'Advanced search' button. The main content area features the journal title 'Computer Physics Communications', the volume and issue information 'Volume 182, Issue 6, June 2011, Pages 1208–1214', and the article title 'Building the International Lattice Data Grid'. The authors listed are Mark G. Beckett^a, Paul Coddington^b, Bálint Joó^c, Chris M. Maynard^a, Dirk Pleiter^d, Osamu Tatebe^e, and Tomoteru Yoshie^e. A 'Show more' link is visible at the bottom of the article information.

Landing page

DOIの必要性と組織

- DOIの必要性

- URL (Unique Resource Locator, <http://...>) はしばしば変更される
- コンテンツへの(恒久的)アクセス保証 → DOI System

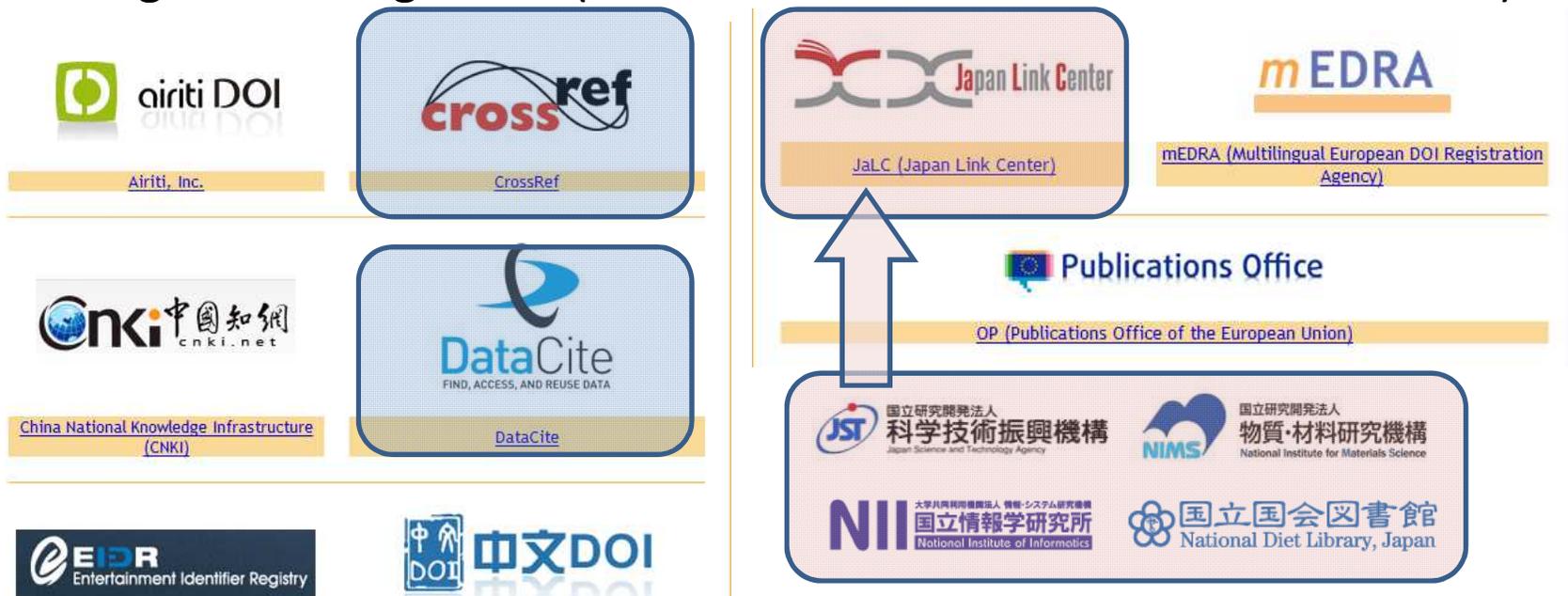


- 組織

- International DOI Foundation (<https://www.doi.org/>)



- Registration Agencies (Prefix 割り当て、DOI 登録、インフラ整備)



- 会員 (コンテンツの管理組織=RAの会員)

DOIの利用とサービス

- DOI の利用例
 - (主として英文の) 学術論文
Nature, Science, APS journals, Elsevier, ...
- Crossref (<http://www.crossref.org/>)
 - 学会・出版社・(研究機関の)図書館等の連盟(非営利)
 - 学術雑誌、書籍、会議録、研究報告のリンク
 - Science Direct, APS Link Manager, CiNii (INSPIRE-HEP ?)

The image shows a screenshot of the CrossRef website. At the top left is the CrossRef logo. Below it are navigation tabs: ABOUT CROSSREF, FOR PUBLISHERS, FOR LIBRARIES, FOR AFFILIATES, and FOR RESEARCHERS. On the right, there are links for Contact and Members Area. The main content area is divided into three columns. The left column is titled 'Meetings & News' and lists: Annual Meeting, CrossRef Blog, CrossTech Blog, CrossRef Newsletter, CrossRef Youtube Channel, Online Payment Portal, CrossRef Webinars, New members, and CrossRef Indicators. Below this is 'Technical Resources' with a link to CrossRef Support. The middle column is titled 'Metadata Search' and features a search box with a magnifying glass icon. Below the search box is a description: 'Search CrossRef's database of 74 million records for authors, titles, DOIs, ORCID, ISSNs, FundRefs, license URIs, etc. You can even paste entire references into the search box and discover their DOIs.' There are links for 'Help! Example queries' and 'API Documentation'. Below the search box is a paragraph: 'CrossRef is an association of scholarly publishers that develops shared infrastructure to support more effective scholarly communications. Our citation-linking network today covers over 75 million journal articles and other content items (books chapters, data, theses, technical reports) from thousands of scholarly and professional publishers around the globe.' The right column is titled 'CrossRef Services' and lists: Cited-by Linking, CrossCheck, CrossMark, CrossRef Metadata Services, CrossRef Text and Data Mining, FundRef, Join CrossRef, and CrossRef Service Providers. At the bottom of the right column is a 'Google Custom Search' box with a 'Search this Site' button and a CrossRef logo.

- Dacite (<http://www.datacite.org>)

What do we do?

We want to help make data more accessible and more useful; our purpose is to develop and support methods to locate, identify and cite data and other research objects. Specifically, we develop and support the standards behind persistent identifiers for data, and our members assign them.

- Members include CERN, IEEE, JaLC
- 実用化された例？

DOIと素粒子物理

- 研究データへのアクセス保証と利用情報のトレース
– 例: ATLAS 実験データへのDOI付与(の試み?)



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Information

References (121)

Citations (431)

Files

Plots

Data

Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC

DATA tab

ATLAS Collaboration (Georges Aad (Freiburg U.) et al.) [2923人のオーナーを表示](#)

Jul 4, 2013 - 32 pages

Phys.Lett. B726 (2013) 88-119

Phys.Lett. B734 (2014) 406-406

(2013-10-07)

DOI: [10.1016/j.physletb.2013.08.010](https://doi.org/10.1016/j.physletb.2013.08.010), [10.1016/j.physletb.2014.05.011](https://doi.org/10.1016/j.physletb.2014.05.011)

CERN.PH.EP.2013.103

e-Print: [arXiv:1307.1427](https://arxiv.org/abs/1307.1427) [hep-ex] | [PDF](#)

Experiment: [CERN-LHC-ATLAS](#)

論文のDOI

Abstract (arXiv)

Measurements are presented of production properties and couplings of the recently discovered Higgs boson using the decays into boson pairs, $H \rightarrow \gamma\gamma$, $H \rightarrow ZZ^* \rightarrow 4l$ and $H \rightarrow WW \rightarrow l\nu l\nu$. The results are based on the complete pp collision data sample recorded by the ATLAS experiment at the CERN Large Hadron Collider at centre-of-mass energies of 7 TeV and 8 TeV.

Information References Citations Files Plots Data

[Measurements of Higgs boson production and couplings in diboson](#)
Georges *et al.*) Phys.Lett. B726 (2013) 88-119, Phys.Lett. B734 (2014) 40

THIS DATA COMES FROM [DURHAM HEPDATA PROJECT](#)

SUMMARY:

CERN-LHC. Measurements of the cross-section times branching ratio for a st sample recorded by the ATLAS experiment at the CERN Large Hadron Collider with a luminosity of about 25 fb^{-1} . The following table gives links to the $-2\ln(\text{likelihood})$ for a Higgs boson mass $m_H = 125.5 \text{ GeV}$. The display link shows the data as

DATASETS:

Description: $-2 \log$ Likelihood for the $H \rightarrow \gamma\gamma$ channel in the $(\mu_{ggF+ttH} * B/E$

[Go to the record](#)

実データには(まだ)アクセスできない

Information Citations (6) Files

Data from Figure 7 from: Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC

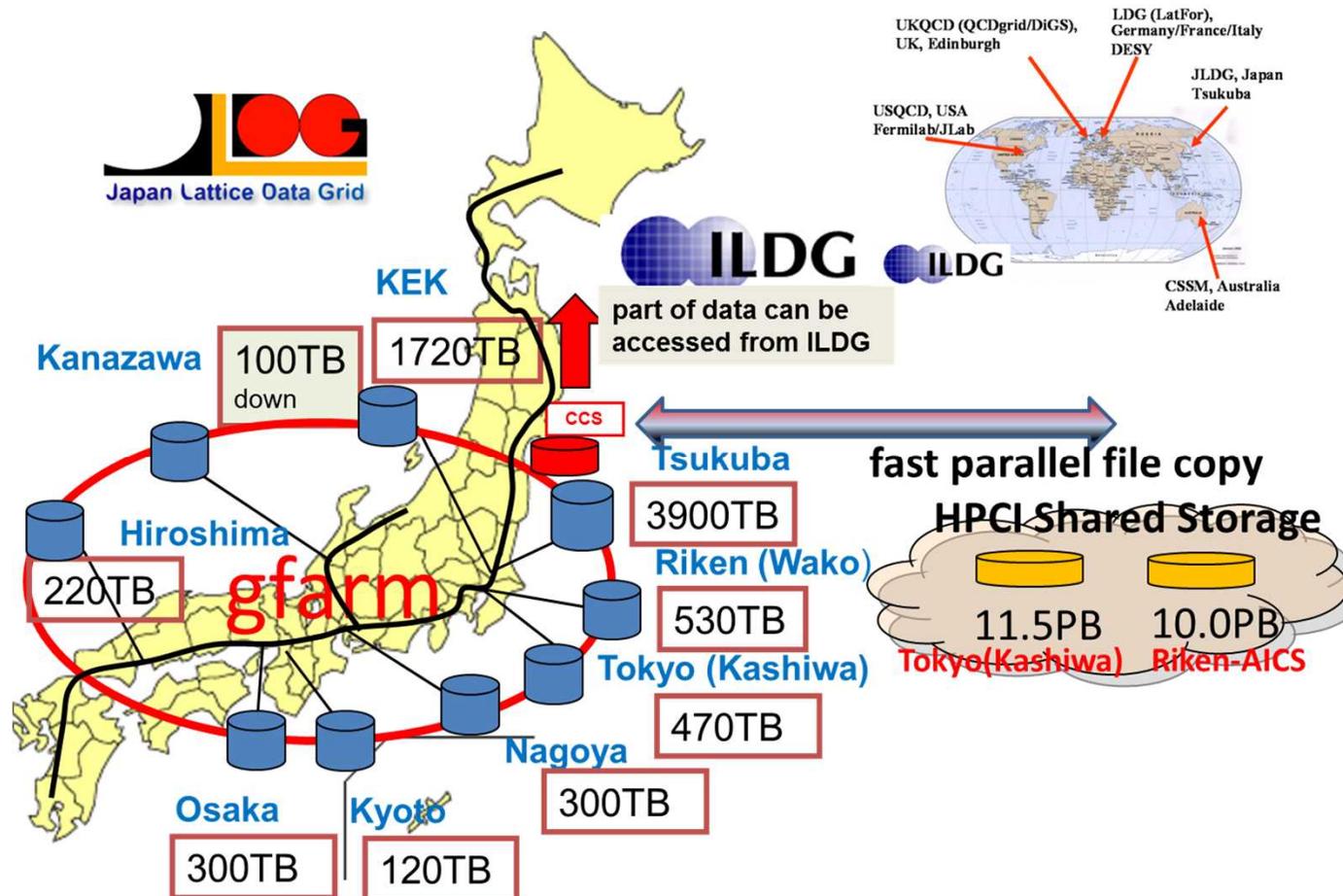
ATLAS Collaboration (Aad, Georges (Freiburg U.) [...]) [2929 入りのページを表示](#)

Cite as: ATLAS Collaboration (2013) HepData, <http://doi.org/10.7484/INSPIREHEP.DATA.A78C.HK44>

Description: $-2 \log$ Likelihood for the $H \rightarrow \gamma\gamma$ channel in the $(\mu_{ggF+ttH} * B/BSM, \mu_{VBF+VH} * B/BSM)$ plane for a Higgs boson mass $m_H = 125.5 \text{ GeV}$.

Lattice QCD ensemble へのDOI付与 (計画中)

- ILDG とJLDG (International/Japan Lattice Data Grid)
 - JLDGはILDG経由でO(60)のensembleを公開
 - それなりに使われて、新たな研究成果もある



- 公開データの利用状況の把握が必要
 - データ公開へのインセンティブ、インフラ整備資金獲得へのアピール
 - 公開データと原論文、それを利用した論文を関連づける(公式な)仕組み
 - 『ensemble に DOI を付与し、論文でそのDOI を引用』
 - ILDG-USQCD からの提案で、US中心に1年程検討
 - 23rd ILDG workshop (April 24th, 2015) で進捗の報告
 - 各地域グリッドで検討
- JLDG ensemble に DOI を付与する方向で纏まりつつある

• USQCD案 (一部完成)

米国OSTIが構築している
研究データベース
Data Explorer record

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Information | References (373) | Citations (280) | Files | Plots | **Data**

Nonperturbative QCD simulations with 2+1 flavors of improved staggered quarks

MILC Collaboration (A. Bazavov et al.) [Show all authors](#)

Mar 2009 - 164 pages

Rev.Mod.Phys. 82 (2010) 1349-1417
DOI: [10.1103/RevModPhys.82.1349](https://doi.org/10.1103/RevModPhys.82.1349)
FERMILAB-PUB-09-674-T
e-Print: [arXiv:0903.3598](https://arxiv.org/abs/0903.3598) [hep-lat] | PDF
Experiment: LATTICE-MILC

Abstract (arXiv)
For several years the MILC collaboration has carried out nonperturbative simulations of full QCD with two degenerate flavors of light quarks, up and down, and with one heavier flavor, the strange quark. Several light quark masses, down to about three times the physical light quark mass, and several lattice spacings have been used. These allow for controlled continuum and chiral extrapolations of many low energy QCD observables. Use of an improved staggered quark formalism, 'asqtad' fermions, has been crucial in achieving this goal. Here we review the improved staggered formalism, emphasizing both advantages and drawbacks. In particular, we review the procedure, known as the 'fourth root trick' for removing unwanted staggered species in the continuum limit. We then describe the lattice ensembles created so far, and the physics results obtained on them. These include the heavy quark potential, spectrum of light hadrons, quark masses, decay constants of light and heavy-light pseudoscalar mesons, semileptonic form factors, computation of the strong coupling constant, spectroscopy of quarkonia, neutral meson mixing, and more. We illustrate the impact of some of these results on the determination of CKM matrix elements. All MILC lattice ensembles are publicly available. Some of the results mentioned were obtained by other groups using these MILC ensembles, some were obtained by MILC in collaboration with other groups, and some by the MILC collaboration alone.

配位を公開する
論文に Data tab

DOE Data Explorer

Search DOE Data Explorer for Energy and Science Data

Lattice QCD gauge ensemble: USQCD/MILC/asqtad /649621b7075m00155m031

MILC asqtad QCD SU(3) gauge ensemble: series-a, a=0.083fm, Lx=5.3fm, Nt=24, L0 m0* (0.00150, 0.031)

Authors: Aubin, Christopher Alan (Frdham U.); Bernard, Claude W (Washington U.); Booth, Tommy D; Regensburg, Daria; Saarnen (Data Institute); Crawford, Thomas Alan (Colorado U.); Bunker, Datta; Caroniu, Edin U; Corbett, Steven A; Bhanu, S; Birmingham, Doreen; Eric Brinken (Wageningen U.); Helle, Ute M; Jechow, Michael; Jethava, James Edward (U. Pacific); Shroder, Oleg; Kallweit, Michael; Williams-Mann, Carl; Coston, James C (Argonne National Laboratory); Toussaint, W; Gong, Hengzhi (U.); Sugar, Robert L; Li, C.; Santschi, Bernhard

Publication Date: 2015-01-01
OSTI Identifier: 1176091
DOE Contract Number: AC02-08CH11367; SC0012704; AC02-07CH11368; AC02-08CH11233; AC02-08OR22728; P407-07009; F026-08ER89851; F022-08ER41443; AC-1605076; PHY-055234; NSF-05-55243; NSF-07-57333

Resource Type: Dataset
Data Type: Numeric Data

Resource Relation: Related Information: Bazavov, A., et al., RevModPhys. 82 (2010) 1349-1417, DOI: 10.1103/RevModPhys.82.1349; Aubin, C., et al., Phys.Rev. D70 (2004) 084505, DOI: 10.1103/PhysRevD.70.084505; Bernard, C., et al., Phys.Rev. D64 (2001) 054508, DOI: 10.1103/PhysRevD.64.054508

Research Org: US Lattice Quantum Chromodynamics Collaboration (USQCD)

Sponsoring Org: SC Office of High Energy Physics (SC-05); SC Office of Nuclear Physics (SC-06); SC Office of Advanced Scientific Computing Research (SC-21); US National Science Foundation (NSF)

Contributing Org: ATIL; American Physical Society; University of Arizona; University of California, Santa Barbara; University of Colorado; Institute of Nuclear Physics, Bonn; University of the Pacific; Stockton; University of Utah; Washington University in St. Louis

Country of Publication: United States

import Inspire-HEP & OSTI
under discussion

日本はどうするか
(JST or NII or JLDGが担当)

a web page for data record

DOI: 10.1104/xxxx.1213

クリック

ランディングページ@NERSC



http://dx.doi.org/10.15484/milc.asqtad.en24a/1177873

The screenshot shows a web browser window displaying the NERSC configuration page. The page title is "The Gauge Connection @ NERSC". The breadcrumb trail is "Home / configs / MILC / 64192f21b781m0028m014 /". The main content area shows a configuration for "configs/MILC/64192f21b781m0028m014" with an "invalid request" error. Below this, there is a section for "I64192f21b781m0028m014.nnnnn (1614 files)" with buttons for "Download Link", "Download/Convert Instructions", and "Copy via GlobusOnline". A table lists the files with columns for "Filename", "Date", "Size", and "Download".

Filename	Date	Size	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2178.info	2013-05-29	612.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2184.info	2013-05-29	612.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2190.info	2013-05-29	611.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2196.info	2013-05-29	612.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2202.info	2013-05-29	610.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2208.info	2013-05-29	612.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2214.info	2013-05-29	611.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2220.info	2013-05-29	611.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2226.info	2013-05-29	612.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2232.info	2013-05-29	612.0 B	Download
configs/MILC/64192f21b781m0028m014/I64192f21b781m0028m014.2238.info	2013-05-29	613.0 B	Download

configuration list

download button

Inspire-HEP を経由せず、OSTI Data Explorer から直接も可

Search for: lattice QCD gauge ensemble

DOE Data Explorer / Search Results / Page 1 of 4

Search for: **lattice QCD gauge ensemble**

Everything 35

Numeric Data 35

Genome / Genetics Data 0

Interactive Data Maps 0

Multimedia 0

Animations / Simulations 0

Figures / Data Plots 0

Specialized Mix 0

Still Images or Photos 0

Software 0

1. **Lattice QCD gauge ensemble**: USQCD/MILC/asqtad/6496f21b7075m00155m031
Aubin, Christopher Alan; Bernard, Claude W.; Burch, Tommy; Datta, Saumen; DeGrand, Thomas Alan; DeTar, Carleton E.; Gottlieb, Steven A.; Gregory, Eric Brittain; Heller, Urs M.; Hetrick, James Edward; et al (Jan. 2015)
MILC asqtad **QCD SU(3) gauge ensemble**, series=a, a=0.083fm, Ls=5.3fm, Nf=2+1; u0.m0=(0.00155,0.031)

2. **Lattice QCD gauge ensemble**: USQCD/MILC/asqtad/4096f21b708m0031m031a
Aubin, Christopher Alan; Bernard, Claude W.; Burch, Tommy; Datta, Saumen; DeGrand, Thomas Alan; DeTar, Carleton E.; Gottlieb, Steven A.; Gregory, Eric Brittain; Heller, Urs M.; Hetrick, James Edward; et al (Jan. 2015)
MILC asqtad **QCD SU(3) gauge ensemble**, series=a, a=0.083fm, Ls=3.3fm, Nf=2+1; u0.m0=(0.0031,0.031)

3. **Lattice QCD gauge ensemble**: USQCD/MILC/asqtad/4096f21b708m0031m031b
Aubin, Christopher Alan; Bernard, Claude W.; Burch, Tommy; Datta, Saumen; DeGrand, Thomas Alan; DeTar, Carleton E.; Gottlieb, Steven A.; Gregory, Eric Brittain; Heller, Urs M.; Hetrick, James Edward; et al (Jan. 2015)
MILC asqtad **QCD SU(3) gauge ensemble**, series=b, a=0.083fm, Ls=3.3fm, Nf=2+1; u0.m0=(0.0031,0.031)

4. **Lattice QCD gauge ensemble**: USQCD/MILC/asqtad/3296f21b7085m00465m031
Aubin, Christopher Alan; Bernard, Claude W.; Burch, Tommy; Datta, Saumen; DeGrand, Thomas Alan; DeTar, Carleton E.; Gottlieb, Steven A.; Gregory, Eric Brittain; Heller, Urs M.; Hetrick, James Edward; et al (Jan. 2015)
MILC asqtad **QCD SU(3) gauge ensemble**, series=a, a=0.083fm, Ls=2.7fm, Nf=2+1; u0.m0=(0.00465,0.031)

5. **Lattice QCD gauge ensemble**: USQCD/MILC/asqtad/2896f21b709m0062m031
Aubin, Christopher Alan; Bernard, Claude W.; Burch, Tommy; Datta, Saumen; DeGrand, Thomas Alan; DeTar, Carleton E.; Gottlieb, Steven A.; Gregory, Eric Brittain; Heller, Urs M.; Hetrick, James Edward; et al (Jan. 2015)
MILC asqtad **QCD SU(3) gauge ensemble**, series=a, a=0.083fm, Ls=2.3fm, Nf=2+1; u0.m0=(0.0062,0.031)

6. **Lattice QCD gauge ensemble**: USQCD/MILC/asqtad/2896f21b709m0062m031b
Aubin, Christopher Alan; Bernard, Claude W.; Burch, Tommy; Datta, Saumen; DeGrand, Thomas Alan; DeTar, Carleton E.; Gottlieb, Steven A.; Gregory, Eric Brittain; Heller, Urs M.; Hetrick, James Edward; et al (Jan. 2015)

前スライドの
ランディングページへ

Dataset: Lattice QCD gauge ensemble: USQCD/MILC/asqtad/6496f21b7075m00155m031 | DOE Data Explorer - Mozilla Firefox

DOE Data Explorer / Search Results / Dataset: Lattice QCD gauge ensemble: USQCD/MILC/asqtad/6496f21b7075m00155m031

Lattice QCD gauge ensemble: USQCD/MILC/asqtad/6496f21b7075m00155m031

DOI

MILC asqtad **QCD SU(3) gauge ensemble**, series=a, a=0.083fm, Ls=5.3fm, Nf=2+1; u0.m0=(0.00155,0.031)

Publication Date: 2015-01-01

OSTI Identifier: 1178091

DOE Contract Number: AC02-06CH11357; SC0012704; AC02-07CH11359; AC02-05CH11231; AC05-00OR22725; PHY07-57035; FG02-91ER40661; FC02-06ER41443; ACI-1053575; PHY-0555234; NSF05-55243; NSF07-57333

Resource Type: Dataset

Data Type: Numeric Data

Resource Relation: Related Information: Bazovov A., et al., RevModPhys. 82 (2010) 1349-1417, DOI: 10.1103/RevModPhys.82.1349; Aubin, C., et al., Phys Rev D79 (2004) 094505, DOI: 10.1103/PhysRevD.79.094505; Bernard, C., et al., Phys Rev D64 (2001) 054506, DOI: 10.1103/PhysRevD.64.054506

Research Org: US Lattice Quantum Chromodynamics Collaboration (USQCD);

Sponsoring Org: SC Office of High Energy Physics (SC-25); SC Office of Nuclear Physics (SC-26); SC Office of Advanced Scientific Computing Research (SC-21); US National Science Foundation (PHY)

Contributing Orgs: ANL; American Physical Society; University of Arizona; University of California, Santa Barbara; University of Colorado, Boulder; Indiana University, Bloomington; University of the Pacific; Stockton; University of Utah; Washington University in St. Louis

Country of Publication: United States

View Dataset

DOI: 10.15484/amlc.asqtad.en12a/1178091

Select the DOI to obtain a copy of this dataset from the publisher.

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