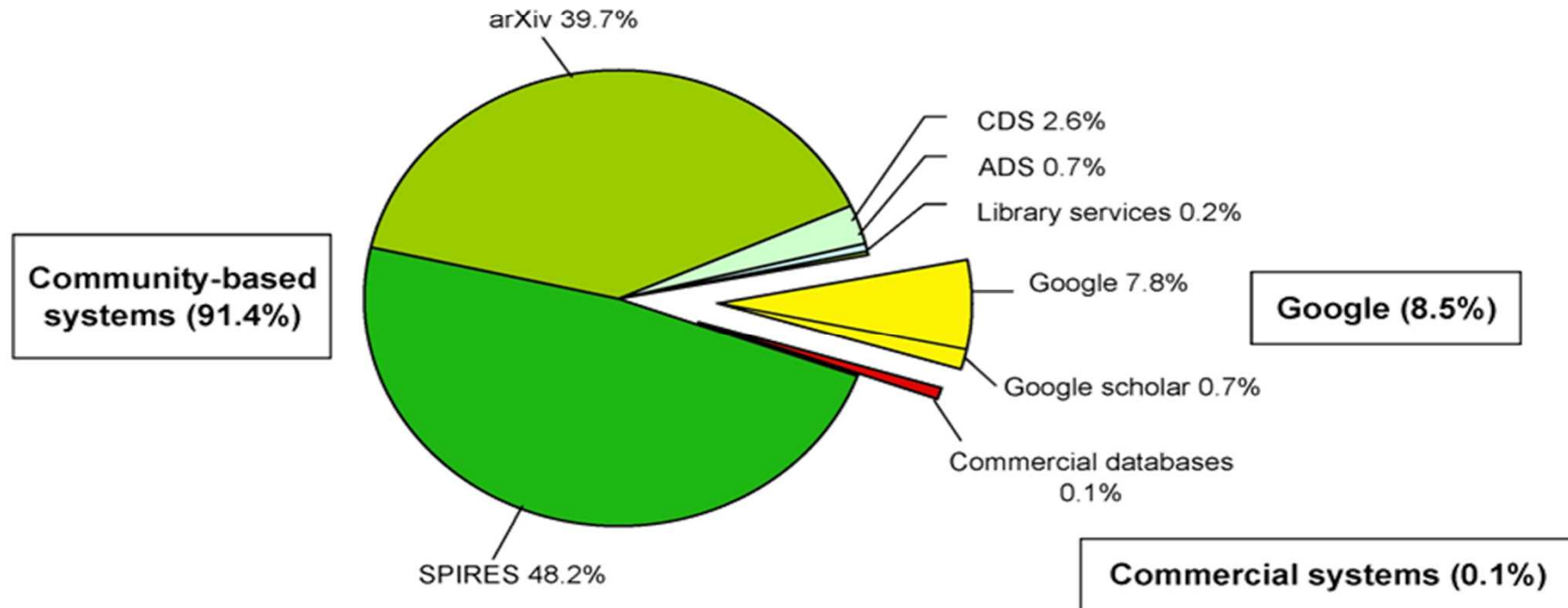


Inspire

das moderne Informationssystem
der Hochenergiephysik

Welche Quellen nutzen HEP-Physiker?



From 2007 survey of 2,000 physicists. Gentil-Beccot et al, *Information Resources in High-Energy Physics: Surveying the Present Landscape and Charting the Future Course*.

J.Am.Soc.Inf.Sci.60:150-160,2009 arXiv:0804.2701

SPIRES

- SLAC – DESY – Fermilab Kollaboration
- SPIRES-HEP
 - Metadaten für 800k Objekte
 - Preprints, Zeitschriftenartikel, Konferenzbeiträge, Bücher, graue Literatur
 - Seit 1974, web server seit 1991
- vernetzte Datenbanken
 - Conferences, institutions, experiments, hepnames, jobs
- hohe Datenqualität, hoher Grad an Abdeckung
- Hohe Akzeptanz, Einbindung der Nutzer

Aber:

- sehr alte Technologie

Herausforderungen der Zukunft

- Vielfalt von Objekten
 - Multimedia, Forschungsdaten, Software, Web sites...
- Zunehmende Interdisziplinarität
 - Astroteilchenphysik
- Web 2.0
- Text + data mining, mashups
- ...

SPIRES braucht neue Plattform

Inspire-Projekt

- 1st Annual PPA Information Resource Summit
 - SLAC Mai 2007
 - APS, Elsevier, Springer, JHEP, Google, arXiv, PDG, NASA-ADS, SLAC, Fermilab, DESY and CERN
- Geburtsstunde des INSPIRE-Projekts
 - CERN, DESY, Fermilab und SLAC beschließen gemeinsamen Aufbau eines neuen HEP-Informationssystems
 - CERN Invenio Software als Plattform
 - Inhalt und Funktionen von SPIRES definieren Parameter des Zielsystems



Invenio

- Open Source digitales Multimedia-Bibliothekssystem
 - Seit 96 am CERN entwickelt
 - GNU General Public License
- Plattform für CDS (CERN Document Server)
 - > 1 Mio Multimedia-Objekte
- Zielgruppe: große Repositorien (1M+)
 - > 25 Installationen weltweit
- Apache / Python / MySQL

Invenio

- Leistungsstarke Suchmaschine
 - Google-ähnliche Geschwindigkeit bis zu 2M records
 - Kombinierte Suche über Metadaten, Referenzen, Volltext
- Viele Displayoptionen
- Sehr gute Skalierbarkeit
- Flexible Metadaten
 - Multimedia
 - Nutzerdefinierte Ein- und Ausgabeformate
 - Verknüpfungen
- Personalisierung, collaborative features
 - Gruppen, Reviews, Kommentare, baskets, alerts
 - User accounts

Inspire Vision

- umfassende HEP-Informationsplattform
- Volltext-Repositoryum
 - Langzeitarchivierung
- text / data mining
- Web2.0 Anwendungen
- Hybride Metriken für Artikel, Autoren, Gruppen
 - Verbesserte Zitatanalyse
 - Nutzerstatistiken/Empfehlungen/Bewertungen
- Integration von Forschungsdaten

INSPIRE Zeitplan

- Sommer 2007
 - Projektkonzept, erste Planung
- Herbst/Winter 2007
 - Erste Tests, Datenabbildung
- Frühling 2008
 - 2. HEP Information Resource Summit, DESY
 - Expression of Interest der Forschungsdirektoren von CERN, DESY, Fermilab und SLAC
 - Alpha-Version der Nutzeroberfläche
- Sommer-Winter 2008
 - Verbesserung der Nutzeroberfläche
 - Entwicklung von Werkzeugen für Katalogisierung und Datenpflege
 - Automatische Klassifizierung und Schlagwortvergabe
- Frühling /Sommer 2009 (To Do)
 - Workflow-Steuerungssystem
 - Interface für Nutzerkorrekturen
 - Belastungstests
- Herbst/Winter 2009 (To Do)
 - Inspire-Release
 - neue Applikationen

Inhalt

- Metadaten der gesamten HEP-Literatur
 - ausgehend vom SPIRES- und CDS-Bestand
- Volltext-Repositoryum
 - Preprints
 - *OA-Zeitschriftenartikel*
 - *SCOAP3-Archiv*
 - *Konferenzfolien + OA proceedings*
 - graue Literatur
- andere Medien
 - Videos, Software, Daten...
- *Aggregate verwandten Materials*

Datenstruktur

- MARC
 - erfolgreiche Konversion vom SPIRES-Format

- utf-8, i18n, TeX

- z.B. japanische Zeichen

Universal Fermi Gas with Two- and Three-Body Resonances.

[Yusuke Nishida](#), ([西田介](#)), [Dam Thanh Son](#), [Shina Tan](#) ([Washington U., Seattle](#)). INT-PUB-07-51. Nov 12, 2007. 4 pp.

Published in **Phys.Rev.Lett. 100: 090405, 2008**

e-Print: **arXiv:0711.1562 [cond-mat.other]**

- Formeln

Higgs mediated lepton flavor violating tau decays $\tau \rightarrow \mu\gamma$ and $\tau \rightarrow \mu\gamma\gamma$ in effective theories.

[J.I. Aranda](#), [F. Ramirez-Zavaleta](#), [J.J. Toscano](#), [E.S. Tututi](#). Apr 16, 2008. 6 pp.

e-Print: **arXiv:0804.2652 [hep-ph]**

Suchsyntax

- Google-ähnliche Suchfunktion
 - Ellis extra dimensions
- Fuzzy Suche
 - Do you mean ...?
- *Synonyme*
 - HEP-Taxonomie
- ähnliche Artikel
 - benutzerdefiniert:
Titel, Abstract, Volltext, Schlagwörter, Referenzen...
 - Nutzerstatistik

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HEP 3,811 records found 1 - 10 [▶▶](#) jump to record: Search took 0.02 seconds.

- 1. Proposal to continue the study of neutrino and anti-neutrino interactions in the 15' bubble chamber using a heavy mix of neon and hydrogen and a dichromatic neutrino beam.**
 R.J. Cence, M.D. Jones, F.A. Harris, S.I. Parker, M.W. Peters, V.Z. Peterson, (Spokesperson), V.J. Stenger, G.N. Taylor (Hawaii U.), H.H. Bingham, J. Lys (UC, Berkeley) *et al.*. FERMILAB-PROPOSAL-0686. Mar 25, 2004. 12 pp.
[References](#) | [BibTeX](#) | [LaTeX\(US\)](#) | [LaTeX\(EU\)](#) | [EndNote](#)
[Fermilab Library Server \(fulltext available\)](#)
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- 2. Neutrino-induced pion production from nuclei at medium energies.**
 C. Praet, O. Lalakulich, N. Jachowicz, J. Ryckebusch. Apr 17, 2008. 25 pp.
 e-Print: [arXiv:0804.2750 \[nucl-th\]](#)

[Information](#) [References](#) [Citations](#) [Discussion](#) [Usage statistics](#) [Fulltext](#)

Axions In String Theory.

Peter Svrcek (Stanford U., Phys. Dept. & SLAC), Edward Witten (Princeton, Inst. Advanced Study).
May 22, 2006

Published in: **JHEP 0606: 051, 2006**
e-Print: **hep-th/0605206**

Abstract: In the context of string theory, axions appear to provide the most plausible solution of the strong CP problem. However, as has been known for a long time, in many string-based models, the axion coupling parameter F_a is several orders of magnitude higher than the standard cosmological bounds. We re-examine this problem in a variety of models, showing that F_a is close to the GUT scale or above in many models that have GUT-like phenomenology, as well as some that do not. On the other hand, in some models with Standard Model gauge fields supported on vanishing cycles, it is possible for F_a to be well below the GUT scale.

Keyword(s): [string model: heterotic](#) ; [gauge field theory: SU\(3\)](#) ; [instanton](#) ; [axion](#) ; [violation: CP](#) ; [dimensional reduction](#) ; [anomaly](#) ; [membrane model: D-brane](#) ; [bibliography](#)

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Measurements of the cross-section for $e^+ e^- \rightarrow \text{hadrons}$ at center-of-mass energies from 2-GeV to 5-GeV.

J.Z. Bai, Y. Ban, J.G. Bian, A.D. Chen, H.F. Chen, H.S. Chen, J.C. Chen, X.D. Chen, Y.B. Chen, B.S. Cheng *et al.* [Zeige alle 186 Autoren.](#)
Feb 6, 2001

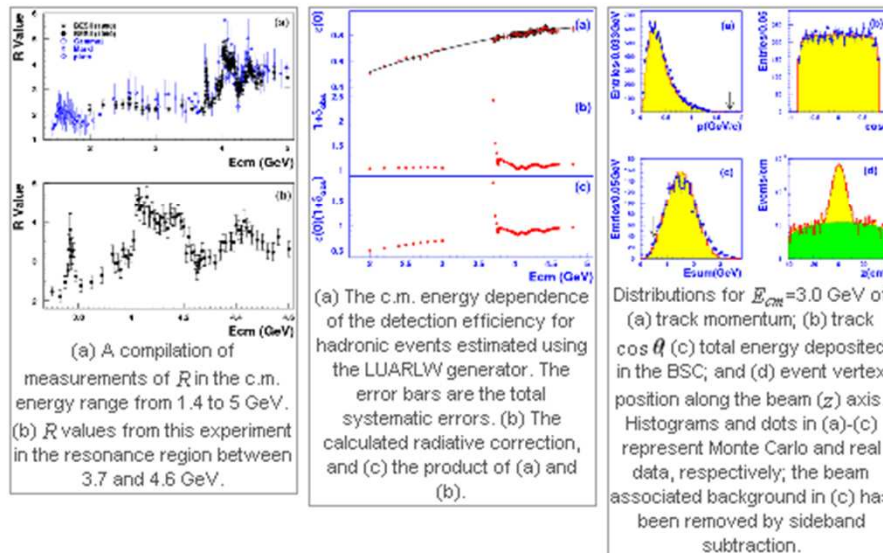
Published in: **Phys.Rev.Lett.** 88: 101802, 2002
e-Print: **hep-ex/0102003**

Abstract: We report values of

$$R = \sigma(e^+e^- \rightarrow \text{hadrons}) / \sigma(e^+e^- \rightarrow \mu^+\mu^-)$$

for 85 center-of-mass energies between 2 and 5 GeV measured with the upgraded Beijing Spectrometer at the Beijing Electron-Positron Collider.

Keyword(s): [electron positron colliding beams](#) ; [electron positron annihilation](#) ; [hadron multiple production](#) ; [cross section hadronic](#) ; [energy dependence](#) ; [magnetic spectrometer BES](#) ; [experimental results](#) ; [Beijing Stor](#) ; [2-5 GeV-cms](#)



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- zitiert gemeinsam mit
- Zitat-Analyse/Übersicht
- *Autoren-Netzwerke*

Information References Citations Discussion Usage statistics Fulltext

Fusing gauge theory tree amplitudes into loop amplitudes - [Bern, Zvi](#) *et al* hep-ph/9409265 SLAC-PUB-6563, SACLAY-SPH-T-94-95, UCLA-TEP-94-29, SWAT-94-36

Cited by: 215 records

- (196) [Progress in one loop QCD computations](#) - [Bern, Zvi](#) *et al* hep-ph/9602280 SLAC-PUB-7111, UCLA-96-TEP-5, SACLAY-SPH-T-96-10
- (160) [Calculating scattering amplitudes efficiently](#) - [Dixon, Lance J.](#) hep-ph/9601359 SLAC-PUB-7106, C95-06-04.1
- (154) [One loop amplitudes for e+ e- to four partons](#) - [Bern, Zvi](#) *et al* hep-ph/9708239 SLAC-PUB-7529, SACLAY-SPH-T-97-090, UCLA-97-TEP-10
- (132) [On the relationship between Yang-Mills theory and gravity and its implication for ultraviolet divergences](#) - [Bern, Z.](#) *et al* hep-th/9802162 SLAC-PUB-7751, UCLA-98-TEP-03, SWAT-98-183
- (132) [One-loop gauge theory amplitudes in N=4 super Yang-Mills from MHV vertices](#) - [Brandhuber, Andreas](#) *et al* hep-th/0407214 QMUL-PH-04-06

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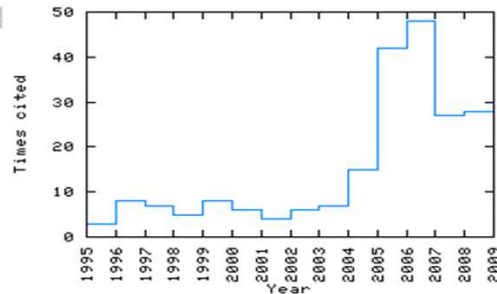
- (1) [Efficient analytic computation of higher order QCD amplitudes](#) - [Bern, Zvi](#) *et al* hep-ph/9503261 SLAC-PUB-6771, SLAC-PUB-95-6771, C94-12-13
- (89) [Factorization in one loop gauge theory](#) - [Bern, Zvi](#) *et al* hep-ph/9503236 UCLA-95-TEP-6
- (196) [Progress in one loop QCD computations](#) - [Bern, Zvi](#) *et al* hep-ph/9602280 SLAC-PUB-7111, UCLA-96-TEP-5, SACLAY-SPH-T-96-10
- (8) [One loop QCD amplitudes from Cutkosky rules](#) - [Bern, Zvi](#) UCLA-96-TEP-19
- (100) [One loop amplitudes for e+ e- -> anti-q q anti-Q Q](#) - [Bern, Zvi](#) *et al* hep-ph/9610370 SLAC-PUB-7316, SACLAY-SPH-T-96-111, UCLA-96-TEP-33

Co-cited with: 2516 records

- (396) [One loop n point gauge theory amplitudes, unitarity and collinear limits](#) - [Bern, Zvi](#) *et al* hep-ph/9403226 SLAC-PUB-6415, SACLAY-SPH-T-94-20, UCLA-TEP-94-4, SWAT-94-17
- (240) [Perturbative gauge theory as a string theory in twistor space](#) - [Witten, Edward](#) hep-th/0312171
- (226) [MHV vertices and tree amplitudes in gauge theory](#) - [Cachazo, Freddy](#) *et al* hep-th/0403047
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Autoren

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- Citation summary
- Häufige Schlagworte

Svrcek, Peter

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1 [Svrcek, P.](#)

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3. **Liu, Yan-Rui** (刘言锐) ([Beijing, Inst. High Energy Phys.](#)) [[PAPERS](#)] [[Papers at this affiliation](#)] [[arXiv](#)] [[GOOGLE](#)] [[STUDENTS](#)] [[Similar names](#)]

Ph.D. advisor: [Zhu, Shi-Lin](#)

Email: *Click number by name to see email address and affiliation history.*

Field: hep-ph, nucl-th

Date verified 10/13/08

Author ID number: INSPIRE-00030878

HEP Taxonomie

- Hierarchie von HEP Konzepten
 - aus DESY HEP Thesaurus entstanden
 - DESY klassifiziert HEP Artikel seit 1964
- Synonyme (regular expressions), verwandte Terme, Definitionen...
- SKOS, rdf → *OWL*?
- Automatische Indexierung
 - Bibclassify (DESY-CERN Entwicklung)
 - Recommendersystem für Indexer
- Automatische Selektion
 - Relevantes Material für Inspire
- *verbesserter Suchalgorithmus*
- *Subject tagging durch Nutzer*
 - 70% der Umfrageteilnehmer würden mehr als 30 min/Woche investieren

Schlagwortextraktion

arXiv:0903.3933

Author keywords:

quantum cosmology -> quantum cosmology
wheeler-dewitt equation ->
tunneling probability -> tunneling
positive cosmological constant -> cosmological constant

Composite keywords:

10 transformation, canonical [22, 24]
9 potential, symplectic [22, 33]
3 tensor, energy-momentum [3, 3]
2 quantization, canonical [8, 24]
2 symmetry, gauge [4, 2]
2 oscillator, harmonic [2, 2]
1 dimension, 2 [0, 33]
1 fluid, pressure [22, 2]
1 operator, differential [16, 1]
1 inflation, open [4, 1]
1 field theory, scalar [0, 1]

Single keywords:

19 wave function
14 tunneling
13 Wheeler-DeWitt equation
13 cosmological constant
8 zero mode
7 Robertson-Walker
7 quantum cosmology
6 variational
5 Schroedinger equation
4 boundary condition
4 Poisson bracket
4 phase space

Acronyms:

WDW Wheeler-DeWitt equation

Core keywords:

Wheeler-DeWitt equation
quantum cosmology

Partnerschaften

- 3. HEP Information Resource Summit – Fermilab Mai 2009
- Nachbargebiete
 - Engere Zusammenarbeit mit ADS (Übergang zu Invenio)
nächster Summit gemeinsam mit ADS
- Verlage
 - Metadaten, Volltext, Autorenidentifizierung
- Andere Informationsanbieter
 - Particle Data Group – Verknüpfung von PDG ID mit Inspire Schlagwörtern
 - Thomson-Reuter: ResearchId für HEP-Autoren über Inspire Id
Anzeige von WoS Zitierhäufigkeiten in Inspire
- *Offene API für Drittparteien*

Daten

Information References Citations Keywords Discussion Usage statistics Volltext Holdings

The Ultraviolet Behavior of N=8 Supergravity at Four Loops - [Bern, Z. et al](#) - SLAC-PUB-13608UCLA-09-TEP-09-47arXiv:0905.2326

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 - [GuideToNeq8Files.pdf](#) [311242 B]
- Neq8FourLoops**
 - Version 1 [Neq8FourLoops.m](#) [2817045 B]
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