高能物理开放信息环境适应与发展探索

于润升

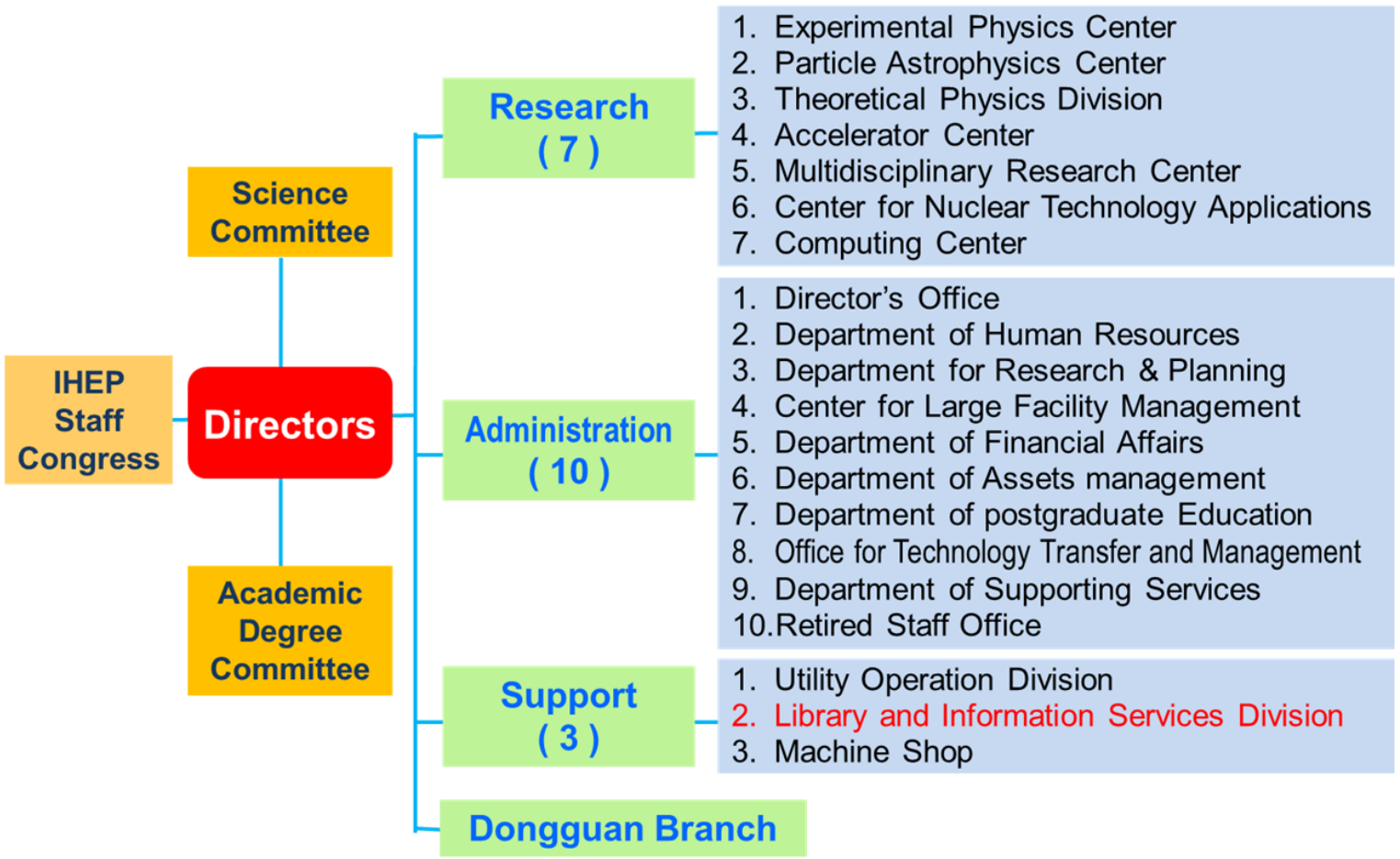
中科院高能物理所文献信息部

高校图书馆发展论坛，西安，2014-5-29

Outline

- 支撑服务对象简介
- 高能物理学术信息服务特点
- 高能物理开放信息环境适应与业务开拓
- 几条感想

IHEP organization chart



Main Research Disciplines of IHEP

Particle Physics

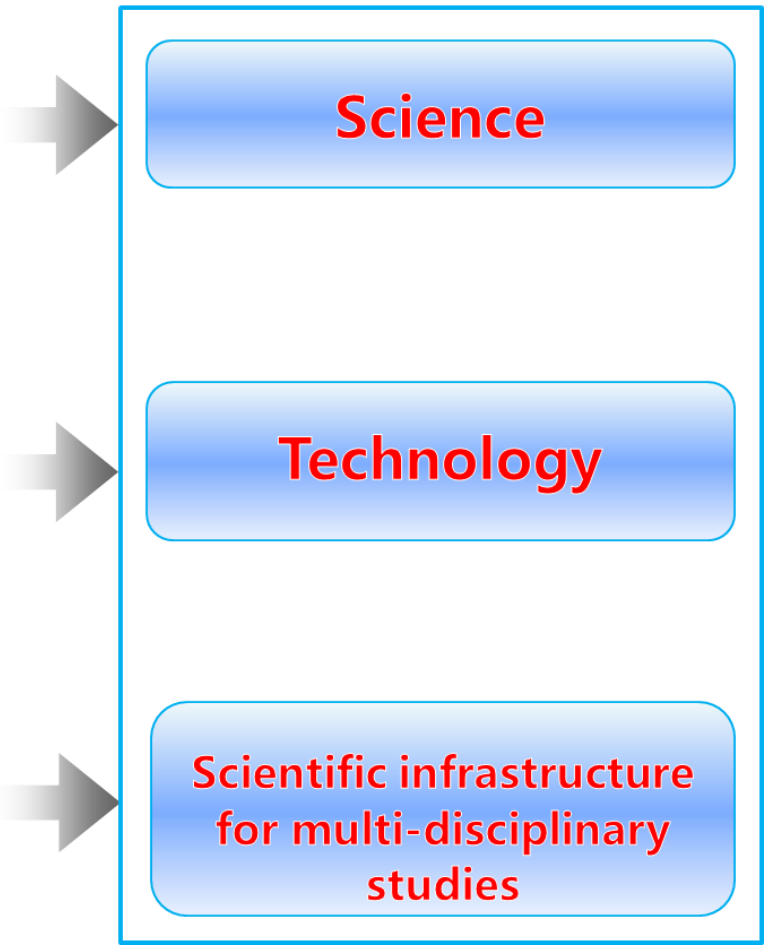
- HEP Exp. Based on Accelerators
- Particle Astrophysics & Neutrino Exp.
- Particle Detection and Electronics
- Particle Physics Theory

Accelerator Physics and Technologies

- High Luminosity Electron Accelerator
- High Intensity Proton Accelerator
- Applied Research and Technology Transfer

Radiation Technologies and Applications

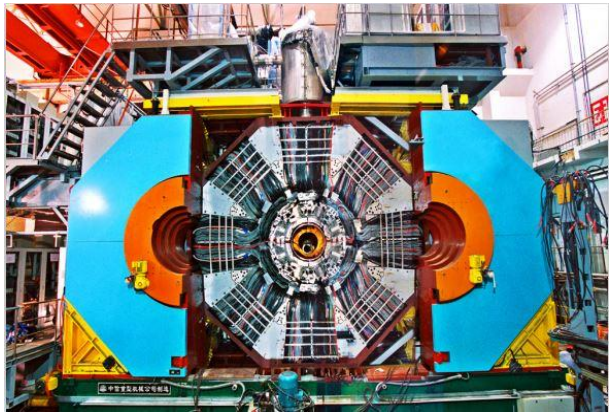
- Synchrotron Radiation Techniques & Applications
- Neutron Scattering Techniques & Applications
- Nuclear Analytical Techniques & Applications



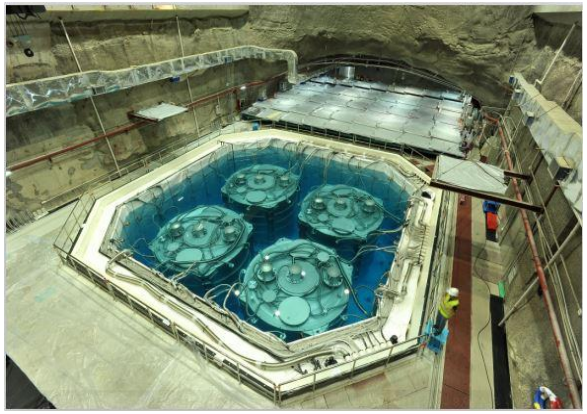
Main research Facilities

BEPC

BEPCII

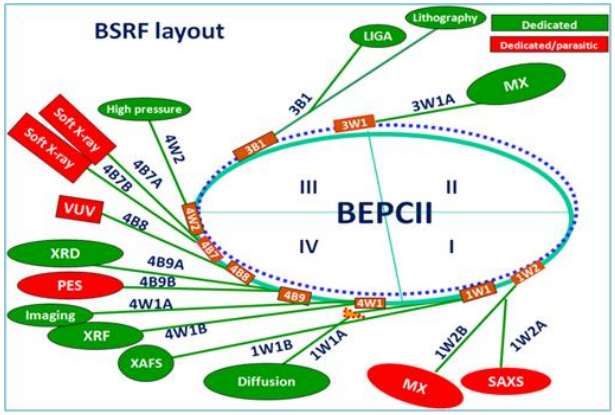


BESIII



Daya Bay

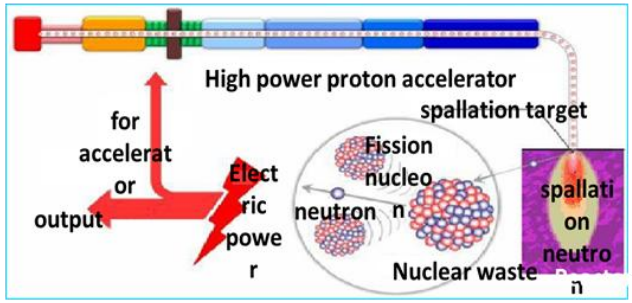
Main research Facilities



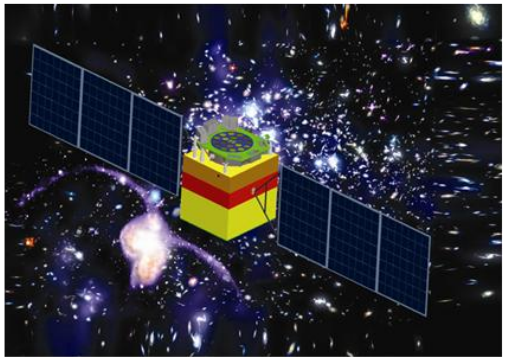
BSRF

Yangbajing

CSNS



ADS



HXMT

BAPS

The BESIII Collaboration

US (5)

Univ. of Hawaii
Carnegie Mellon Univ.
Univ. of Minnesota
Univ. of Rochester
Univ. of Indiana

Europe (13)

Germany: Univ. of Bochum,
Univ. of Giessen, GSI
Univ. of Johannes Gutenberg
Helmholtz Ins. In Mainz
Russia: JINR Dubna; BINP Novosibirsk
Italy: Univ. of Torino， Frascati Lab, Ferrara Univ.
Netherland： KVI/Univ. of Groningen
Sweden: Uppsala Univ.
Turkey: Turkey Accelerator Center

Korea (1)

Seoul Nat. Univ.

Japan (1)

Tokyo Univ.

Pakistan (2)

Univ. of Punjab
COMSAT CIIT

China(29)

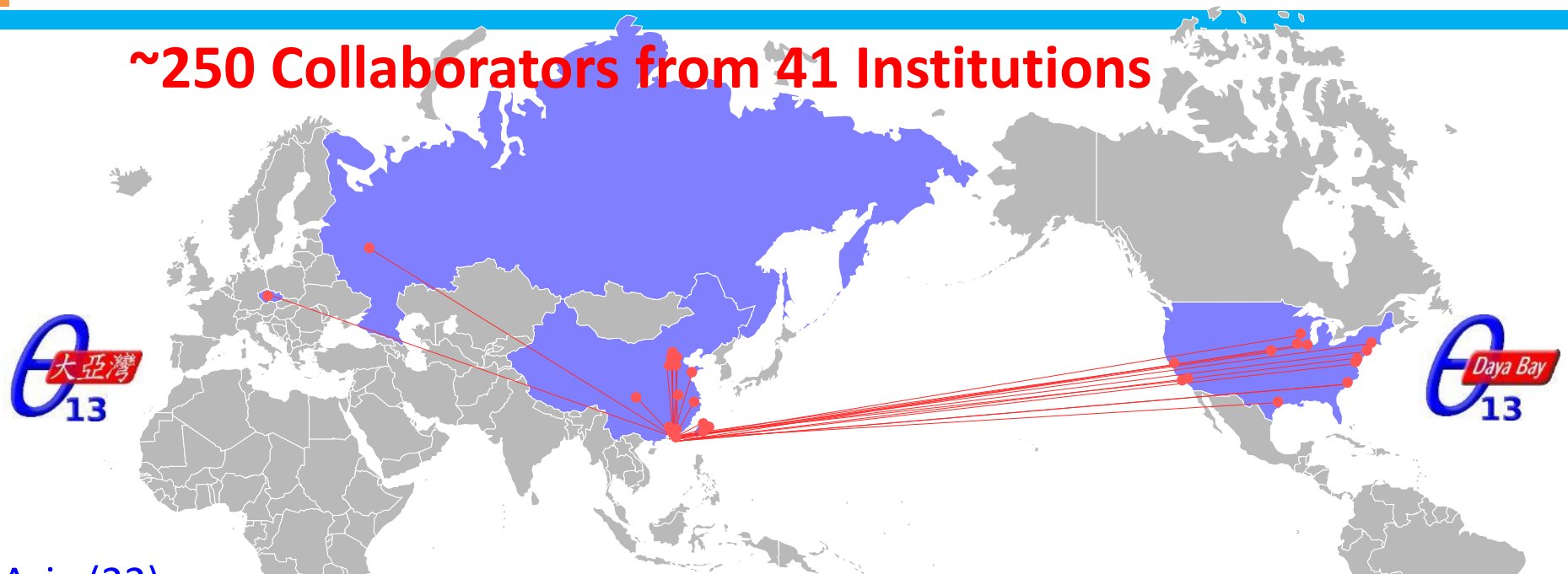
IHEP, CCAST, GUCAS, Shandong Univ.,
Univ. of Sci. and Tech. of China
Zhejiang Univ., Huangshan Coll.
Huazhong Normal Univ., Wuhan Univ.
Zhengzhou Univ., Henan Normal Univ.
Peking Univ., Tsinghua Univ. ,
Zhongshan Univ.,Nankai Univ., Beihang Univ.
Shanxi Univ., Sichuan Univ., Univ. of South China
Hunan Univ., Liaoning Univ.
Nanjing Univ., Nanjing Normal Univ.
Guangxi Normal Univ., Guangxi Univ.
Suzhou Univ., Hangzhou Normal Univ.
Lanzhou Univ., Henan Sci. and Tech. Univ.

~400 members
52 institutions from 11 countries

~180 members from IHEP

Daya Bay collaboration

~250 Collaborators from 41 Institutions



Asia (22)

Beijing Normal Univ., CGNPG, CIAE, Dongguan Polytechnic, ECUST, IHEP, Nanjing Univ., Nankai Univ., NCEPU, NUDT, Shandong Univ., Shanghai Jiao Tong Univ., Shenzhen Univ., Tsinghua Univ., USTC, Xian Jiaotong Univ., Zhongshan Univ., Chinese Univ. of Hong Kong, Univ. of Hong Kong, National Chiao Tung Univ., National Taiwan Univ., National United Univ.

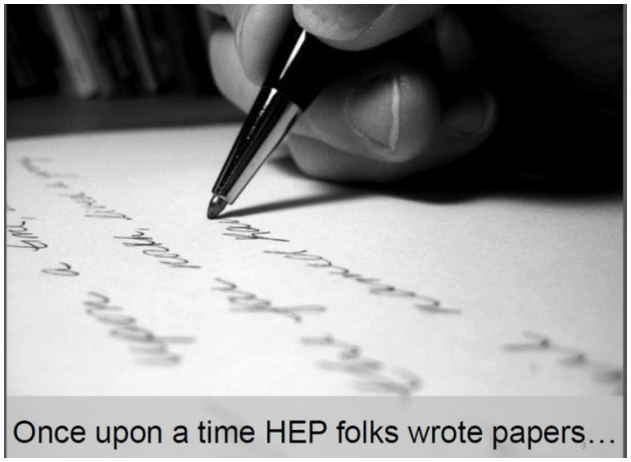
Europe (2)

Charles University, JINR Dubna

North America (17)

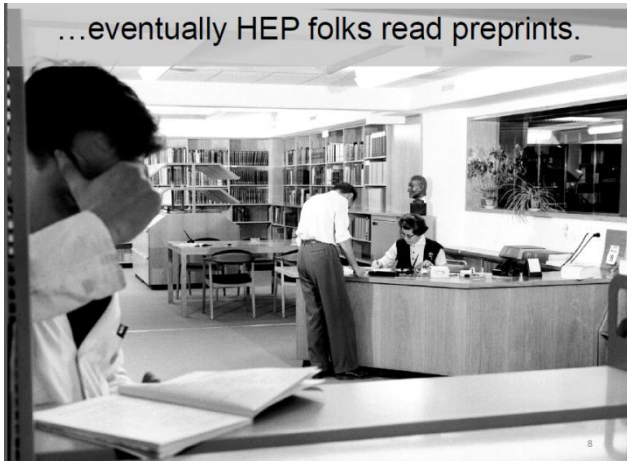
Brookhaven Natl Lab, CalTech, Illinois Institute of Technology, Iowa State, Lawrence Berkeley Natl Lab, Princeton, Rensselaer Polytechnic, Siena College, UC Berkeley, UCLA, Univ. of Cincinnati, Univ. of Houston, UIUC, Univ. of Wisconsin, Virginia Tech, William & Mary, Yale

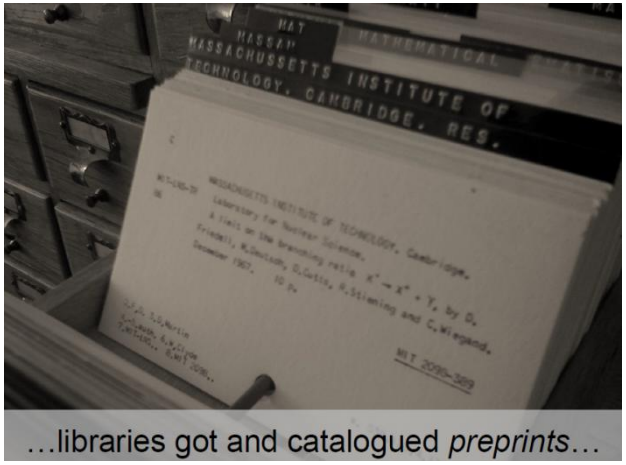
For fast share of information-- preprints


Once upon a time HEP folks wrote papers…


…then went to the mailroom…

For IHEP preprints collection: 1986-1996

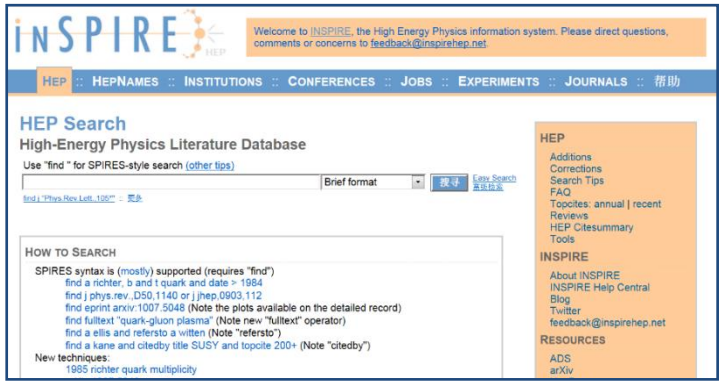

…eventually HEP folks read preprints.



…libraries got and catalogued *preprints*…

Sunje Dallmeier-Tiessen, Bernard Hecker, OR 2013

图书馆积极建设先进学术信息系统



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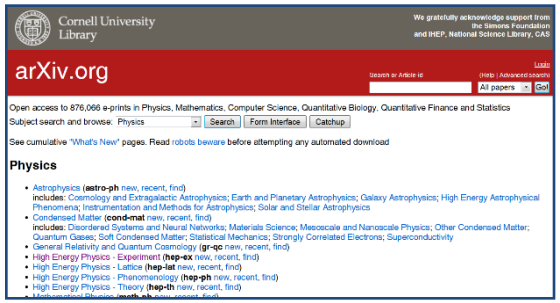
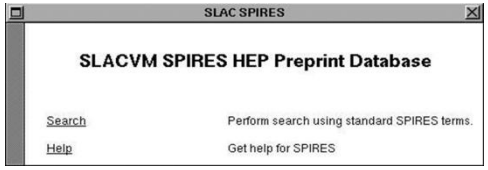
14 August, 1991, first email submission



1991, Internet-based
Paul Ginsparg, LANL

Since 1974,
Covers all HEP literature,
First grey literature electronic catalog,
1991, web interface, First US WEB server

1954-1994
CERN Preprint Repository

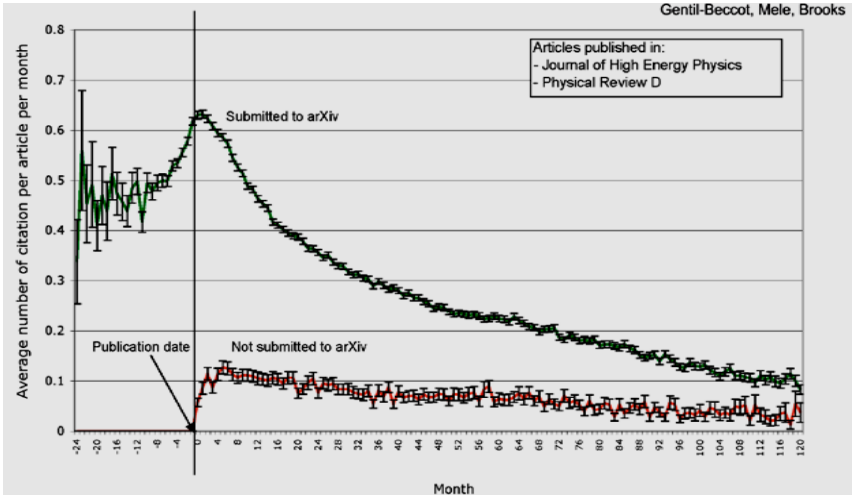


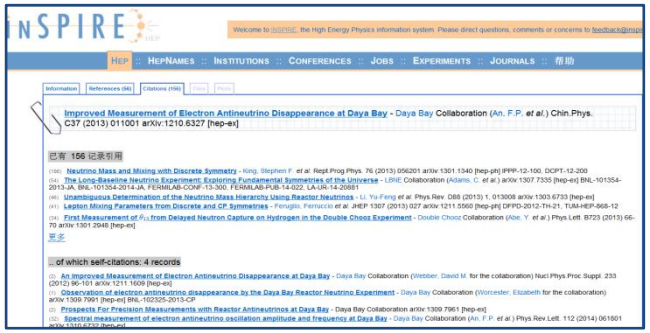
Summer 1992
Interlinking,
First Web-based OA application

1996: onset of the Google era

物理学家支持

Examples



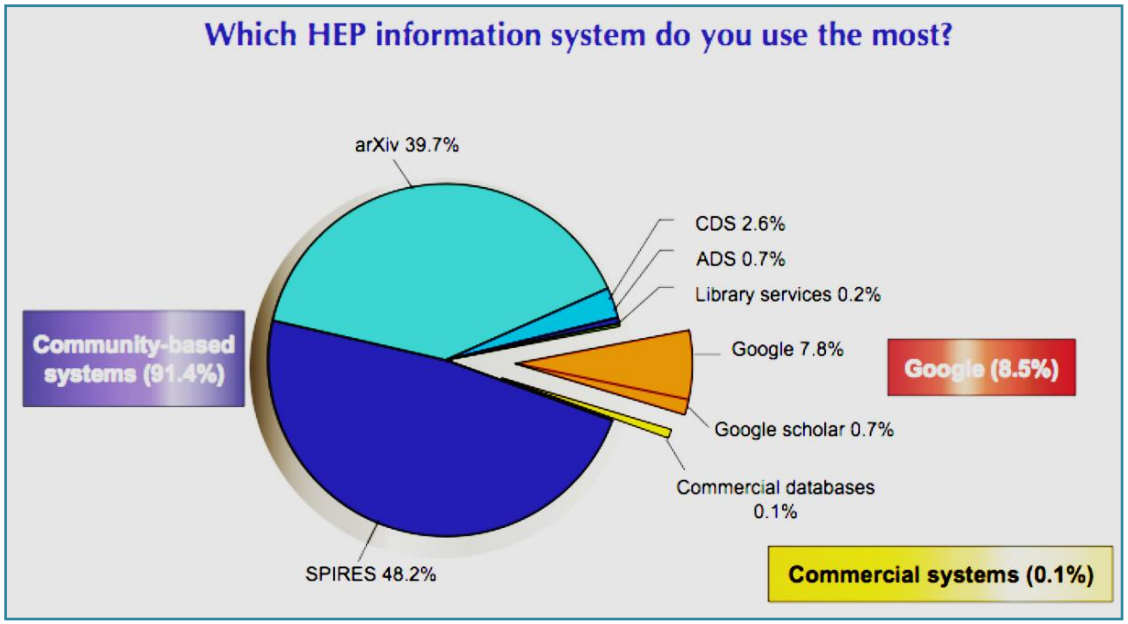


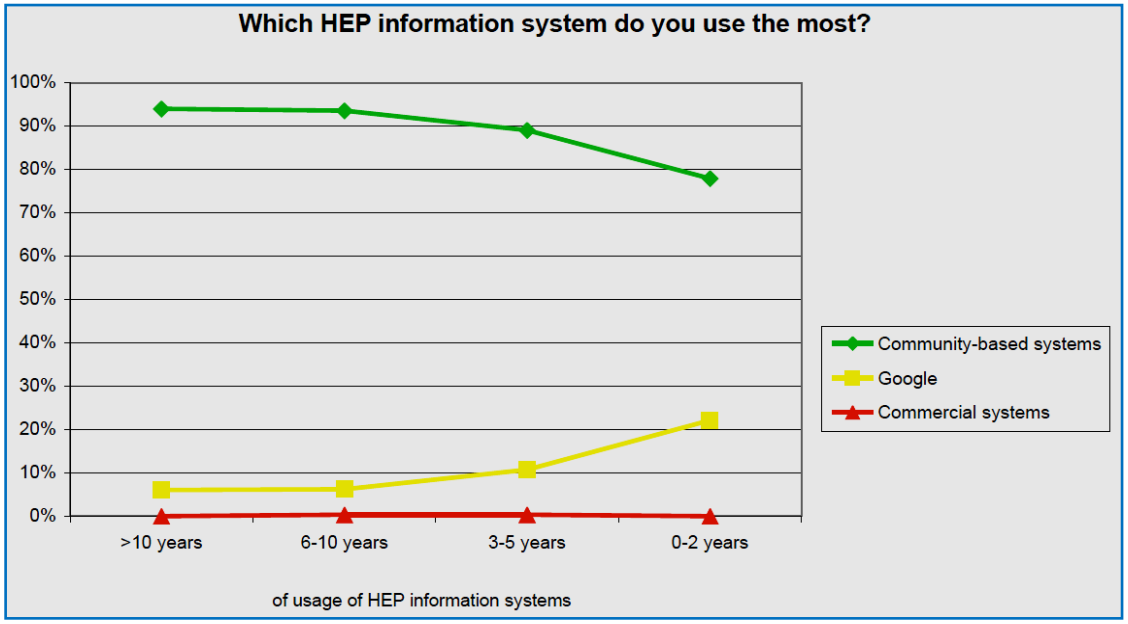
156

53

> From: Pat Scott via RT <feedback@inspirehep.net>
> Subject: [INSPIRE-HEP #397242] Addition of 3 papers to inSPIRES database.
> Date: May 27, 2014 at 3:45:07 GMT+2

> The lack of completeness of inSPIRES wrt
> astro citations, and ADS wrt HEP citations, >is a significant barrier to
> the career development of workers in >astroparticle physics. This is
> because it puts us at **a competitive disadvantage against** pure HEP and pure astro researchers **when applying for jobs, grants, etc, as referees** typically only use one database or the other.





CERN OPEN-2008-015
arXiv:0906.5418
CERN-OPEN-2008-010

Publishers积极参与

Summit of Information Providers in Astronomy, Astrophysics and High Energy Physics (AAHEP-7)

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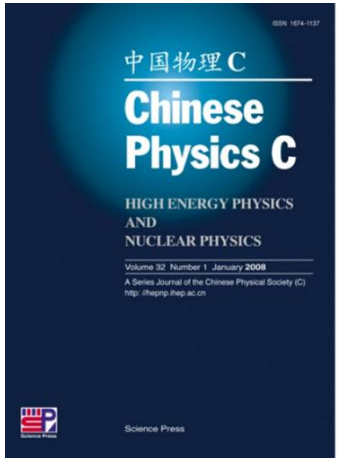
APS, Elsevier, Springer, IOP, OUP, EDP Science…

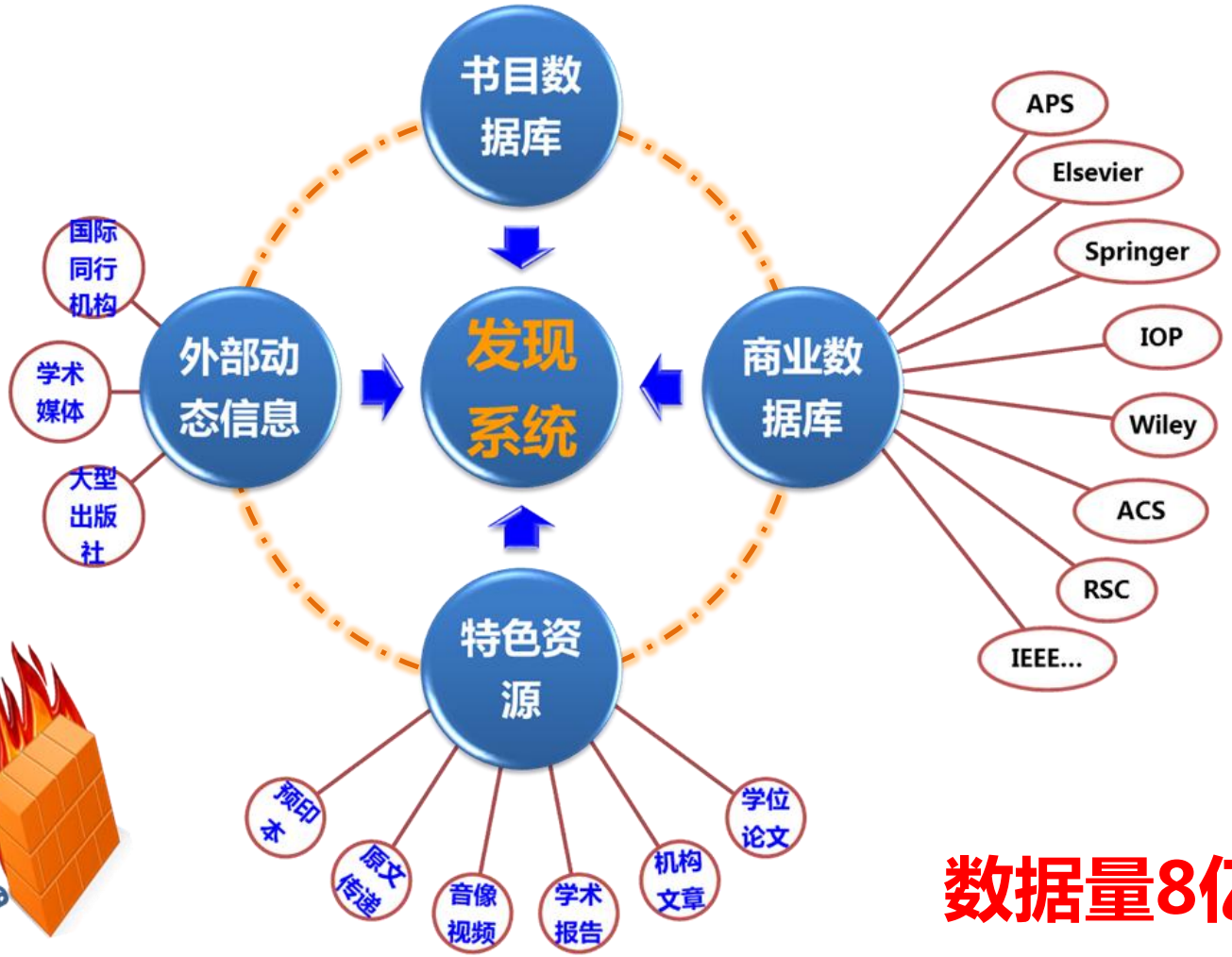
Win-win 3 way partnership

Recent year OA practices at IHEP



- **Library services**
  - Institutional Repository
  - INSPIRE collaboration
- **Journal publishing**
  - Chinese Physics C joins SCOAP^3
  - Chinese Physics C—winning bidder for publishing the PDG products

IR—数字资源扩展、系统整合的有机组成部分



数据量8亿余条

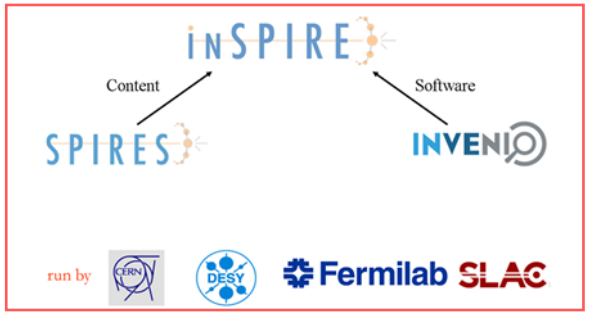
大装置异地建设

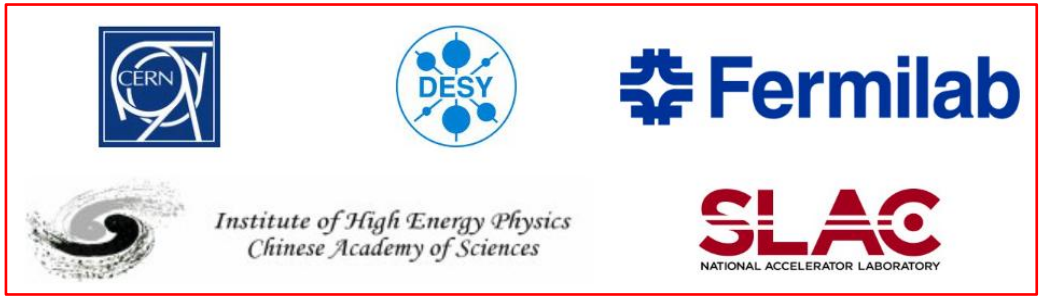
Screen shots of the systems

INSPIRE involvement (2013—)

April 8 **June 6， June19 (IHEP/Fermilab/CERN)， Nov. 4， Dec. 13**

http://inspirehep.net/info/general/project/index





in 1994, IHEP became the first institution in the country to have a fully operational world-wide Internet connection

SLAC–PUB–6478
April 1994
(M)

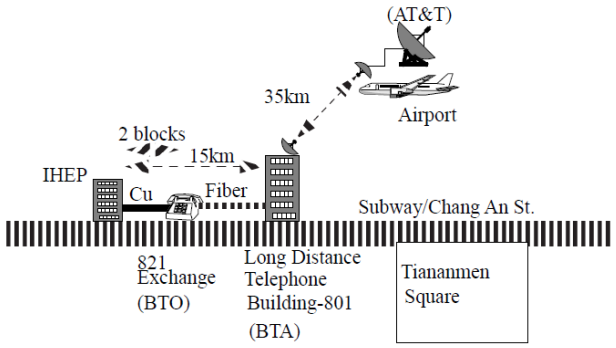
Networking With China*

R. L. A. Cottrell, Charles Granieri
Stanford Linear Accelerator Center, Stanford University, Stanford, California, USA
Lan Fan, Rongsheng Xu
Institute of High Energy Physics, Beijing, China
Yukio Karita
KEK National Laboratory for High Energy Physics, Tsukuba, Japan

Abstract

ules proposed, an AT&T SkyNet satellite link was chosen (Figure 1, Path 3). The contract with AT&T was signed in January 1992. The US cost was about $5,500 installation and $5,000/month. IHEP pays a similar amount in Chinese currency for the Beijing end of the link.

Figure 2: Link from IHEP to Beijing Airport

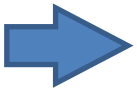


Considerable problems were encountered getting the link from the Beijing airport to IHEP between January 1992 and March 1993. The paths involved in this link are shown in Figure 2. The original plan was to use 64 kbps microwave modems between IHEP and the local 821 phone exchange. However, these were not able to deliver satisfactory service. Instead it was decided to try existing copper links. Then there were problems interfacing between the copper and optical fibers running from the local phone exchange to the satellite earth station located at the Be-

Work Schedule

		Authors of BES,BESII,BESIII (total: 474)										Other Authors		
Group members	Time / Assignment	2014										2015		
		1	2	3	4	5	6	…	10	11	12	1	2	…
R.R.Liu	Record Editing	15	10	30	30	30	30	…	30	30	30	10	10	…
	PBL- cleaning	14	14	30	30+	20+	20+	…	20+	20+	20+	10+	10+	…
C.M.Zhao	Authors info-collecting	15	10	30	30+	30+	30+	…	30+	30+	30+	10+	10+	…
S.Weng	PBL- cleaning	8	6	10	10+	10+	10+	…	10+	10+	10+	5+	5+	…
K.Q.Ma	PBL- cleaning					10+	10+	…	10+	10+	10+	5+	5+	…

"Wang", 95 million
"Li", 93 million
"Zhang", 90 million



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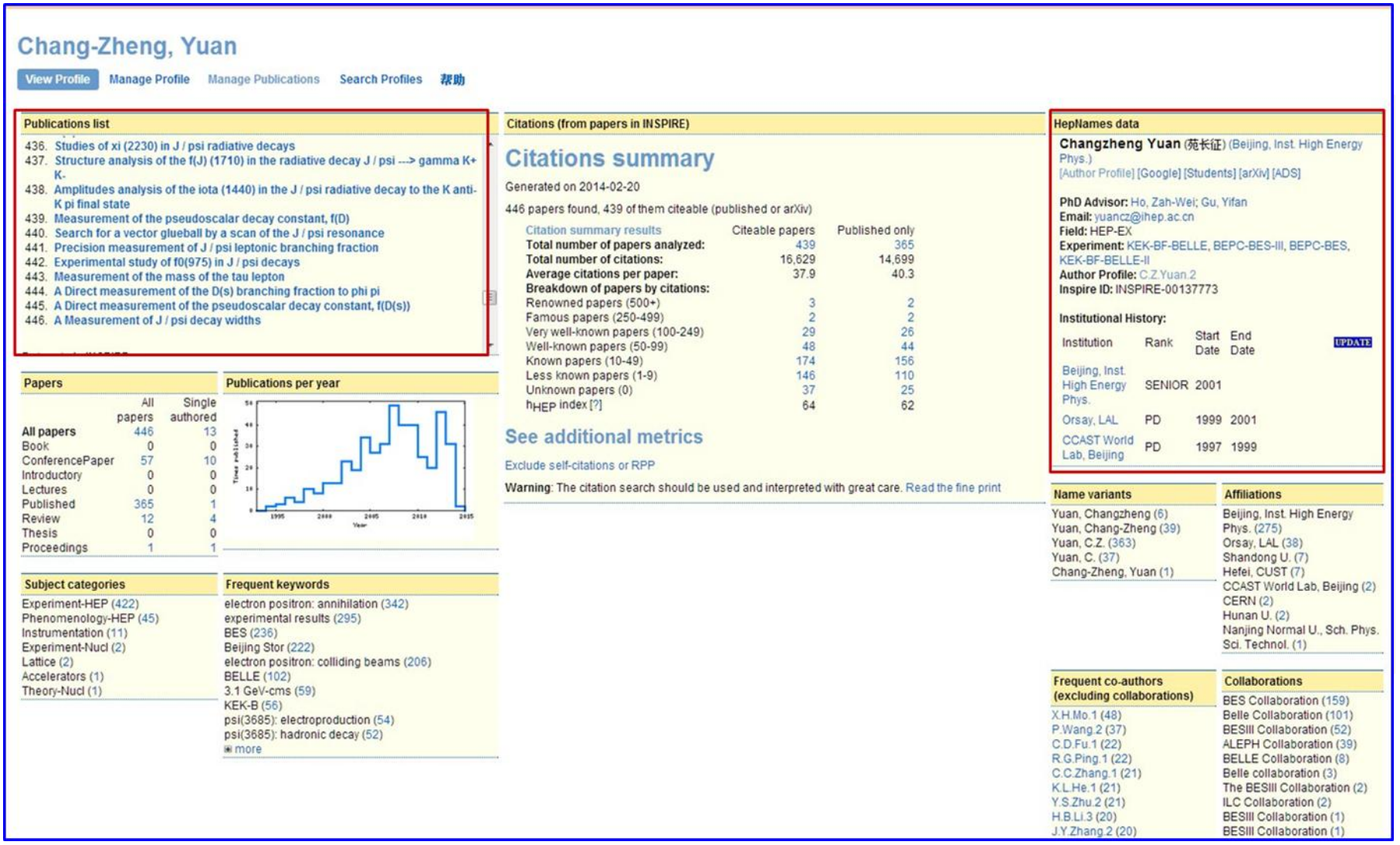

Chang-Zheng, Yuan

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Publications list

436. Studies of xi (2230) in J / psi radiative decays
437. Structure analysis of the f(J) (1710) in the radiative decay J / psi ---> gamma K+ K-
438. Amplitudes analysis of the iota (1440) in the J / psi radiative decay to the K anti-K pi final state
439. Measurement of the pseudoscalar decay constant, f(D)
440. Search for a vector glueball by a scan of the J / psi resonance
441. Precision measurement of J / psi leptonic branching fraction
442. Experimental study of f0(975) in J / psi decays
443. Measurement of the mass of the tau lepton
444. A Direct measurement of the D(s) branching fraction to phi pi
445. A Direct measurement of the pseudoscalar decay constant, f(D(s))
446. A Measurement of J / psi decay widths

Papers

	All papers	Single authored
All papers	446	13
Book	0	0
ConferencePaper	57	10
Introductory	0	0
Lectures	0	0
Published	365	1
Review	12	4
Thesis	0	0
Proceedings	1	1

Publications per year

Subject categories

Experiment-HEP (422)
Phenomenology-HEP (45)
Instrumentation (11)
Experiment-Nucl (2)
Lattice (2)
Accelerators (1)
Theory-Nucl (1)

Frequent keywords

electron positron: annihilation (342)
experimental results (295)
BES (236)
Beijing Stor (222)
electron positron: colliding beams (206)
BELLE (102)
3.1 GeV-cms (59)
KEK-B (56)
psi(3685): electroproduction (54)
psi(3685): hadronic decay (52)
more

Citations (from papers in INSPIRE)

Citations summary

Generated on 2014-02-20

446 papers found, 439 of them citeable (published or arXiv)

Citation summary results	Citeable papers	Published only
Total number of papers analyzed:	439	365
Total number of citations:	16,629	14,699
Average citations per paper:	37.9	40.3
Breakdown of papers by citations:		
Renowned papers (500+)	3	2
Famous papers (250-499)	2	2
Very well-known papers (100-249)	29	26
Well-known papers (50-99)	48	44
Known papers (10-49)	174	156
Less known papers (1-9)	146	110
Unknown papers (0)	37	25
h_{HEP} index [?]	64	62

See additional metrics

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HepNames data

Changzheng Yuan (苑长征) (Beijing, Inst. High Energy Phys.)
[Author Profile] [Google] [Students] [arXiv] [ADS]

PhD Advisor: Ho, Zah-Wei; Gu, Yifan
Email: yuancz@ihep.ac.cn
Field: HEP-EX
Experiment: KEK-BF-BELLE, BEPC-BES-III, BEPC-BES, KEK-BF-BELLE-II
Author Profile: C.Z.Yuan.2
Inspire ID: INSPIRE-00137773

Institutional History:

Institution	Rank	Start Date	End Date
Beijing, Inst. High Energy Phys.	SENIOR	2001	
Orsay, LAL	PD	1999	2001
CCAST World Lab, Beijing	PD	1997	1999

UPDATE

Name variants

Yuan, Changzheng (6)
Yuan, Chang-Zheng (39)
Yuan, C.Z. (363)
Yuan, C. (37)
Chang-Zheng, Yuan (1)

Affiliations

Beijing, Inst. High Energy Phys. (275)
Orsay, LAL (38)
Shandong U. (7)
Hefei, CUST (7)
CCAST World Lab, Beijing (2)
CERN (2)
Hunan U. (2)
Nanjing Normal U., Sch. Phys. Sci. Technol. (1)

Frequent co-authors (excluding collaborations)

X.H.Mo.1 (48)
P.Wang.2 (37)
C.D.Fu.1 (22)
R.G.Ping.1 (22)
C.C.Zhang.1 (21)
K.L.He.1 (21)
Y.S.Zhu.2 (21)
H.B.Li.3 (20)
J.Y.Zhang.2 (20)

Collaborations

BES Collaboration (159)
Belle Collaboration (101)
BESIII Collaboration (52)
ALEPH Collaboration (39)
BELLE Collaboration (8)
Belle collaboration (3)
The BESIII Collaboration (2)
ILC Collaboration (2)
BESIII Collaboration (1)
BESIII Collaboration (1)



SCOAP^3 Journals—publishers

- Elsevier
  - Physics Letters B
  - Nuclear Physics B
- Hindawi
  - Advances in High Energy Physics
- Institute of Physics Publishing / Chinese Academy of Sciences
  - Chinese Physics C
- Institute of Physics Publishing/SISSA
  - Journal of Cosmology and Astroparticle Physics
- Institute of Physics Publishing/Deutsche Physikalische Gesellschaft
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- Oxford University Press/Physical Society of Japan
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  - European Physical Journal C
- Springer/SISSA
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Benefits

- Journal becomes well-known in global HEP community
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  - CHINA, represented by NSTL

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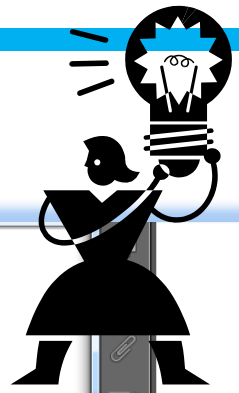

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Latest additions:

2014-05-13 19:35 **Oblique parameters in gauged baryon and lepton numbers with a 125 GeV Higgs** / Y
In an extension of the standard model, where baryon number and lepton number are local gauge symmetries, we analyz
Published in **Chinese Phys. C 38 (2014) 053101** 10.1088/1674-1137/38/5/053101
Fulltext: PDF XML;

2014-05-13 19:35 **Interpretation of Zb(10610) and Zb(10650) in the ISPE mechanism and the Charmoni**
The initial single pion emission (ISPE) mechanism is applied to the processes Υ(5S)→πB(*)B̄(*), whose details have bee
enhancement structures of Zb (10610) and Zb (10650). [...]
Published in **Chinese Phys. C 38 (2014) 053102** 10.1088/1674-1137/38/5/053102
Fulltext: PDF XML;

2014-05-12 11:14 ***O*(αsu2) correction to J/ψ plus ηc production in e+e− annihilation at √s = 10.6 GeV** /
Based on the nonrelativistic QCD factorization approach, *O*(αsu2) corrections to J/ψ plus ηc production in e+e− annihilat
Published in **Chinese Phys. C 38 (2014) 043101** 10.1088/1674-1137/38/4/043101
Fulltext: PDF XML;

2014-05-12 11:12 **Evidence for resonant structures in e+e−→π+π−hc** / Yuan, Chang-Zheng
The cross sections of e+e−→π+π−hc at center-of-mass energies from 3.90 to 4.42 GeV were measured by the BESIII
Published in **Chinese Phys. C 38 (2014) 043001** 10.1088/1674-1137/38/4/043001
Fulltext: PDF XML;

2014-03-22 16:33 **Revisiting the Kπ puzzle in the pQCD factorization approach** / Bai, Wei ; Liu, Min ; Fa
In this paper, we calculated the branching ratios and direct CP violation of the four B→Kπ decays with the inclusion of a
Published in **Chinese Phys. C 38 (2014) 033101** 10.1088/1674-1137/38/3/033101
Fulltext: PDF XML;

2014-01-22 11:23 **Scalar glueball in a soft-wall model of AdS/QCD** / Li, Xue-Feng ; Zhang, Ai-Lin
The scalar glueball is investigated in a soft-wall model of AdS/QCD. [...]
Published in **Chinese Phys. C 38 (2014) 013102** 10.1088/1674-1137/38/1/013102
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2014-01-22 11:23 **Meson decays in an extended Nambu?Jona-Lasinio model with heavy quark flavor**
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Meson decays in an extended Nambu–Jona-Lasinio model with heavy quark flavors

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Abstract: In a previous work, we proposed an extended Nambu-Jona-Lasinio (NJL) model including heavy quark flavors. In this work, we will calculate strong and radiative decays of vector mesons in this extended NJL model, including light ρ, ω, K^*, ϕ and heavy D^*, D_s^*, B^*, B_s^*.

Key words: NJL model, heavy meson, heavy quark limit

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1 Introduction

The Nambu–Jona-Lasinio (NJL) model [1, 2], in its original form as a pre-QCD theory, was constructed of nucleons that interact via an effective two-body contact interaction. The model was later reinterpreted as a theory of quark degrees of freedom [3, 4]. The most important feature of the NJL model is the chiral symmetry of the Lagrangian plus a chiral symmetry breaking ground state. The model was generalized to the $SU(3)_f$ case of light quark flavors in Refs. [5–9].

On the other hand, for heavy quark flavors, the chiral symmetry no longer holds. However, new important symmetries, such as the spin symmetry that was discovered in heavy ($Q\bar{q}$)-mesons [10], which is a consequence of the order $1/m_Q$ of the spin-spin interaction in the effective quark potential [11]. In Ref. [12], the NJL model was generalized to include heavy flavors. Both the chiral symmetry in the light meson sector and the spin symmetry in the heavy meson sector were reproduced with the vector-current interaction. The bosonization technique was used there to obtain an effective Lagrangian of the meson degrees of freedom.

However, as already shown in Ref. [5], the vector-current interaction only is not enough to reproduce the experimental masses of light vector mesons, such as ρ, K^* etc. Other chiral symmetrical interactions, such as the axial-vector-current one, are needed to get satisfactory results for the light meson sector. However, these additional interactions do not obey the spin symmetry in the heavy meson sector since they generate the incorrect spin-spin interaction that is not $1/m_Q$ suppressed. In the above work [12], the authors just introduced two coupling constants G_1 and G_2 for the light meson sector and another different coupling G_3 for the heavy meson sector.

In our previous work [13], we proposed a solution to extend the NJL model to comprise the heavy quark flavors. The NJL interactions were expanded with respect to $1/m_f$ of constituent quark mass m_f, just like the expansion in the heavy quark effective theory (HQET). Naturally, the vector-current interaction is dominant while other interactions, such as the typical axial-vector-current one, should be $1/m_f$ suppressed. We had performed numerical calculations for both the light and heavy meson sectors. The mass spectra fit the experimental data quite well. The decay constants of heavy mesons were smaller than the experimental values, roughly by a factor of 2.

The strong and radiative decays provide us with important information about hadron structure. Experimentally, the decay widths of light vector mesons have been well measured [14–19] and so far, some decay widths or ratios of the charmed and bottom heavy vector mesons have been reported [20–22].

Generally speaking, it is a rigid test for any model to fit the experimental values of the decay width or ratio. The most popular model for strong decay is the $^3P_0$ model [23, 24]. This model has been applied to a great number of decay processes [25–28]. The radiative decays, mainly the M1 transition, which takes place when one of the constituent quark changes its spin and radiates one photon, has been studied in potential quark models [29, 30] or from flavor symmetry [31]. For decays

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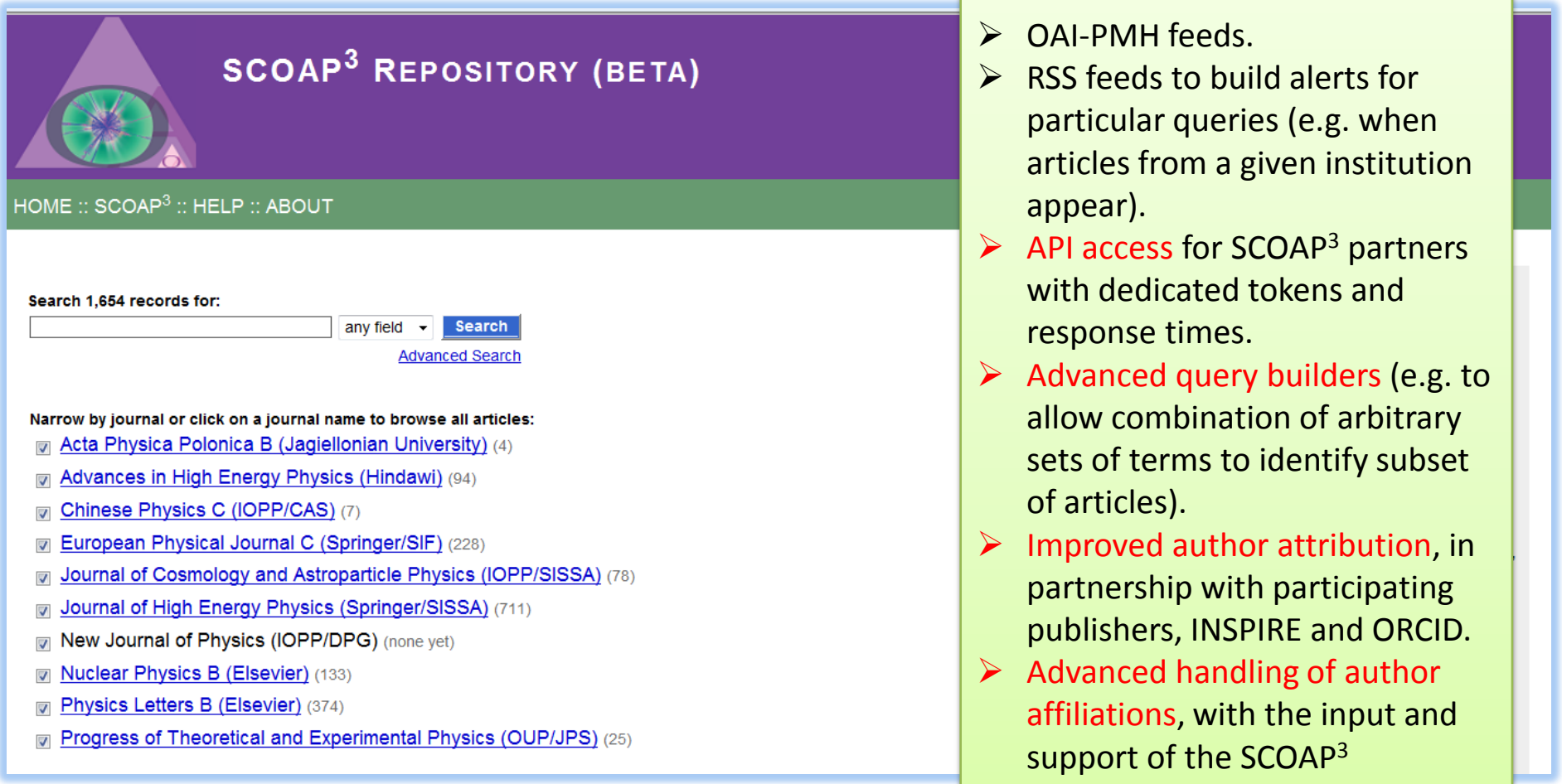

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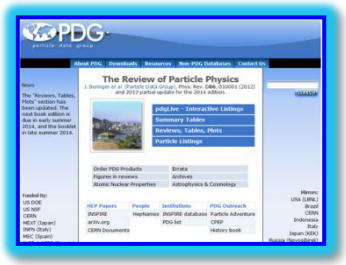

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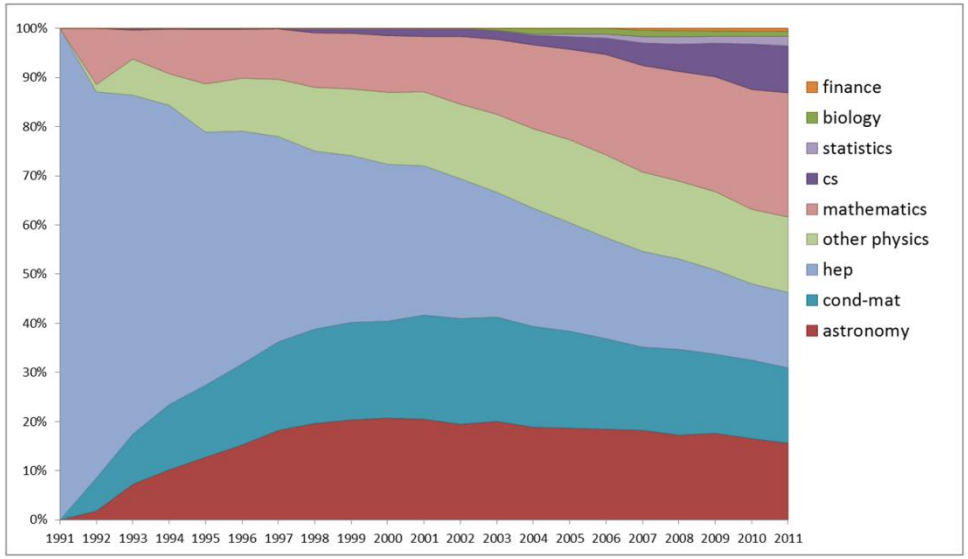

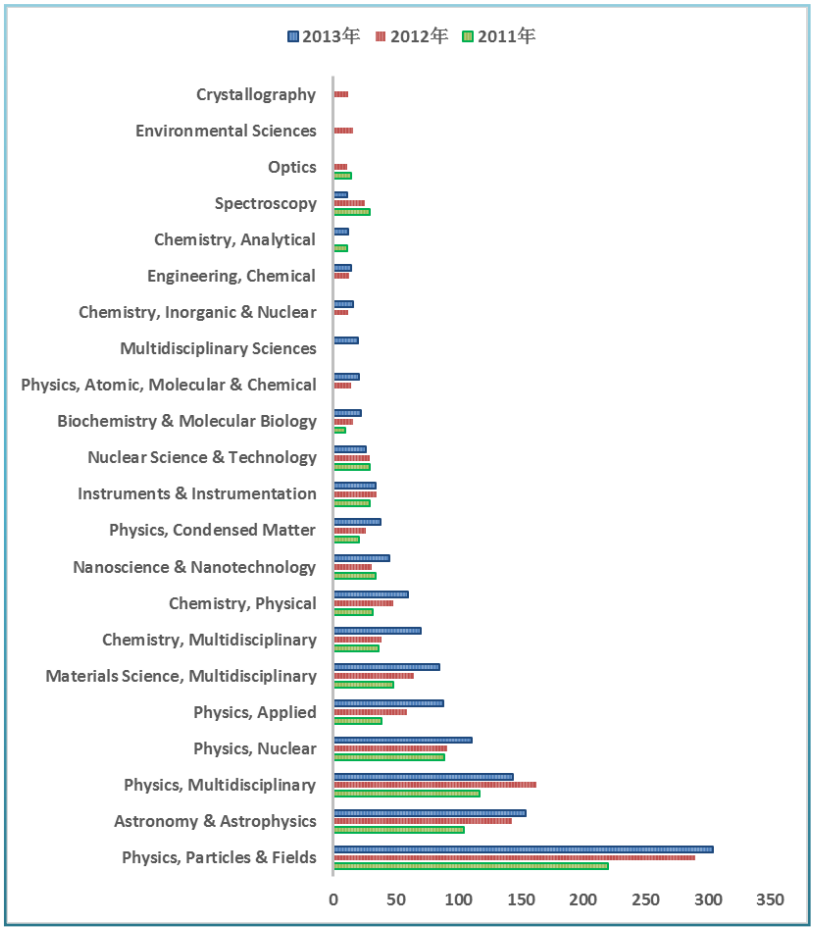

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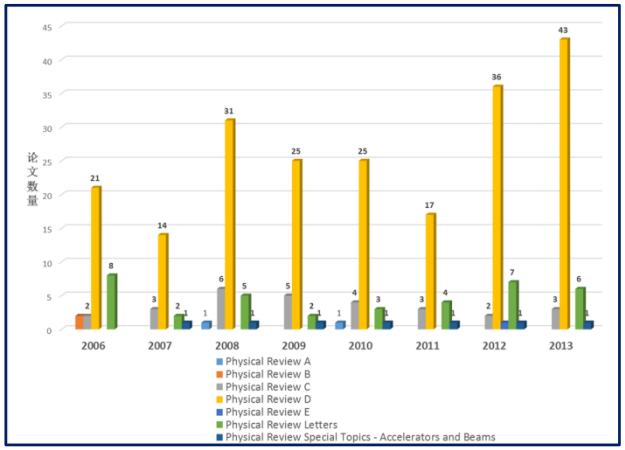

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