Authormagic

An Approach to Author Disambiguation in a large-scale digital library

Jun 16th 2011 @ JCDL in Ottawa

Henning Weiler (Uni Erlangen-Nuremberg & CERN)

Authormagic

- Introduction
- Algorithm
- Crowd Sourcing
- Discussion...

Introduction

- Henning Weiler
  Computer/Information Science PhD
  Uni Erlangen-Nuremberg

- CERN Scientific Information Service
  Archive, Library and Open Access.

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SPIRES SEARCH
...AND A LITTLE MORE

A few words
1985 richter quark multiplicity
Eprint number (note the plots)
arXiv:1007.5048
More complex
(symmetry or asymmetry) author:gell-mann -quark
SPIRES syntax is (mostly) supported (requires "find")
find a richter, b and t quark and date > 1984
Complex citation searching
citedby:author:ellis refersto:author:witten
Range searching
author:randall author:sundrum cited:450->1350
Search words inside papers (Note: limited coverage, phrases coming soon)
unparticle | fulltext | Search

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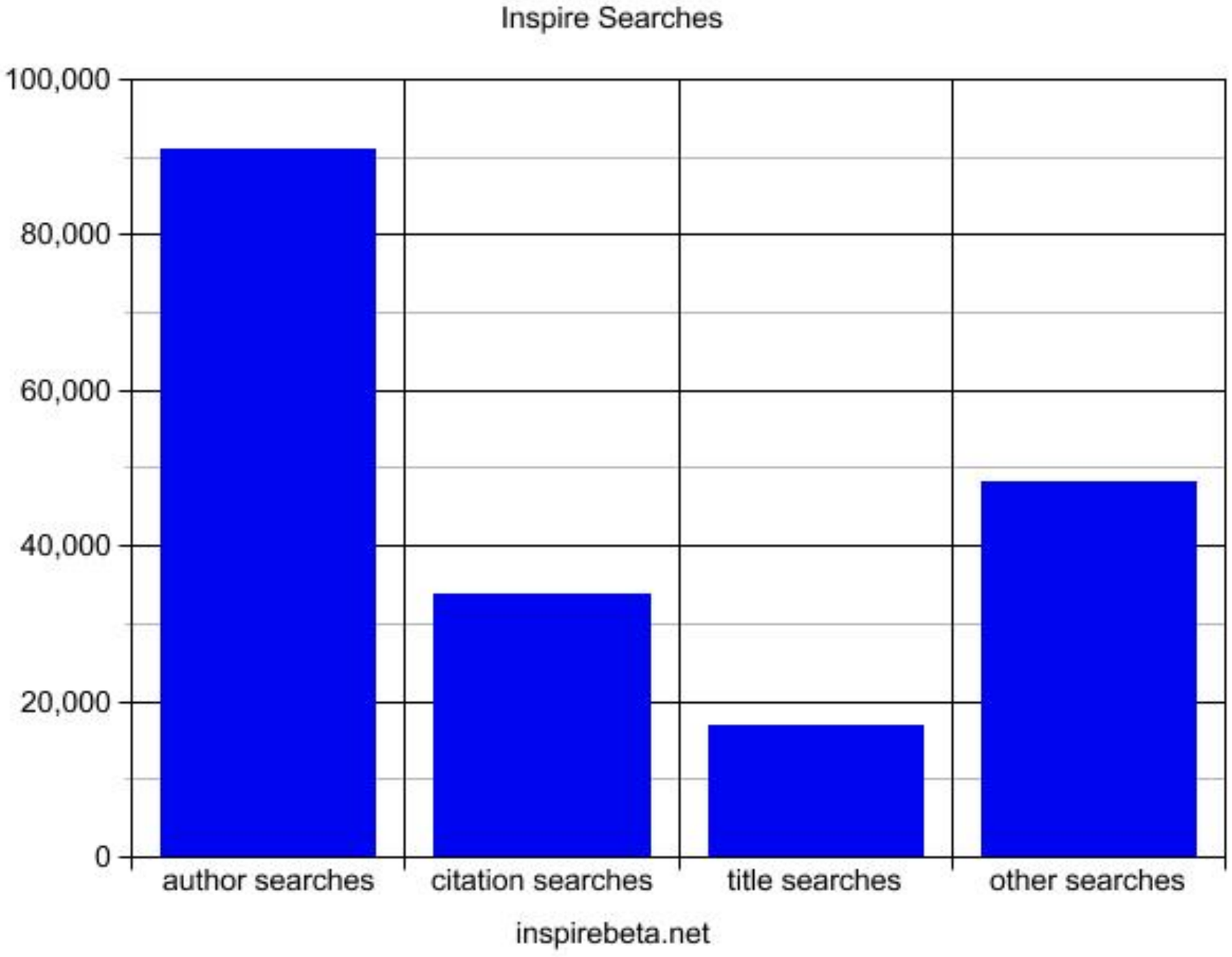
Inspire Searches
100,000
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60,000
40,000
20,000
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citation searches
title searches
other searches
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I need the publication list and citation analysis of myself and others!

I want information about an author!

Ellis, Jonathan R. (2 papers)

Name variants
Ellis, Jonathan R. (2)

Affiliations
unknown affiliation (2)

Papers
All papers (2)
Report (2)
Conference (1)
Review (1)

Frequent co-authors
Efstathiou, George (1)
Leibundgut, Bruno (1)
Lilly, Simon J. (1)
Mellier, Yannick (1)
Peacock, John A. (1)
Schneider, Peter (1)

Frequent keywords
accelerator: proposed (1)
anti-p: beam (1)
astrophysics: antimatter (1)
CERN Lab (1)
communications (1)
counters and detectors (1)
gravitational radiation (1)
neutrino: beam (1)
neutrino: cosmic radiation (1)
nuclide: hadroproduction (1)

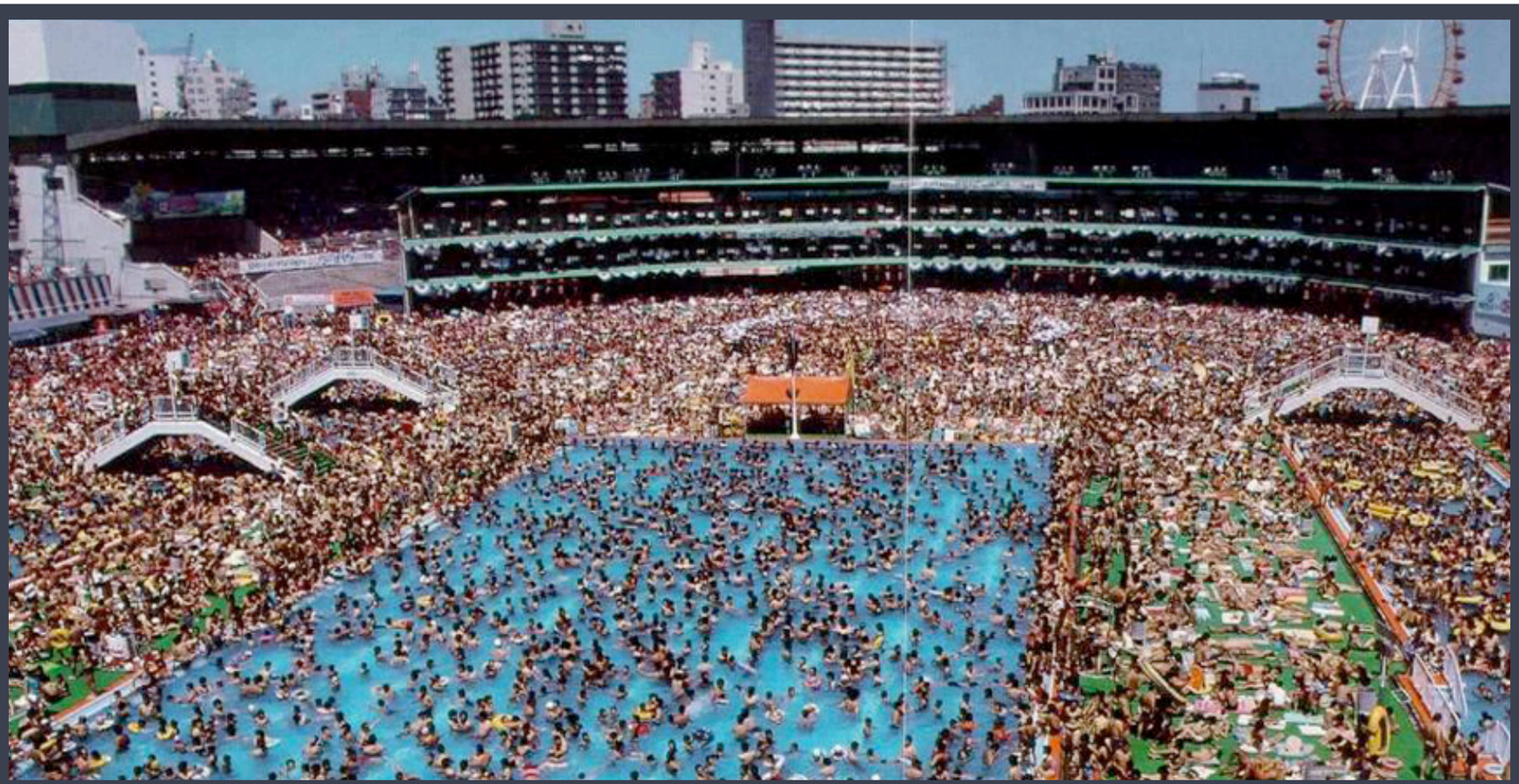
Citations:

Citation summary results	All papers	Published only
Total number of citable papers analyzed:	1	0
Total number of citations:	0	0

The Challenge

Name on document: Ellis, J.

Ellis, John R.; Ellis, J.L.;
Ellis, J.E.; Ellis, John R., (Ed.);
ELLIS, J.; Ellis, John.R.;
Ellis, John R.; Ellis, Jonathan
R.; Ellis, John; Ellis, Jordan;



Chen, Y.K.; Chen, Ying-Xuan; Chen, Yiao-tian; Chen, Yin-Bao; Chen, Yong-shou; Chen, Yan-ping; Chen, Y.S.; Chen, Yu-zhong; Chen, Yi-Xin; Chen, Yinbao; Chen, Yu-Jiuan; Chen, Yong-cong; Chen, Yi-Hong; Chen, Y.Y.; Chen, Ying-hua; Chen, Yin-Hua; Chen, Yuan- Bo; Chen, Ying- Yang; Chen, Yu-Qi; Chen, Y.X.; Chen, Yi-min; Chen, Yi- Xin; Chen, Y.T.; Chen, Y.; Chen, Yu; Chen, Y.J.; Chen, Yaw-Hwang; Chen, Yang; Chen, Ying; Chen, Y.C.; Chen, Y. S.; Chen, Y.Q.; Chen, Yujun; Chen, Yu-jun; Chen, Yan-bei; Chen, Yi-xiong; Chen, Yanbei; Chen, Yue; Chen, Y.N.; Chen, Yi-Fei; Chen, Yu Qin; Chen, Yun-Xia; Chen, Yun; Chen, Yin; Chen, Yu-Qin; Chen, Yulin; Chen, Yihan; Chen, Yong; Chen, Yu-Chun; Chen, Yanjun; Chen, Y.B.; Chen, Ye; Chen, Yan; Chen, Yun-Hong; Chen, Yun- Hong; Chen, Yuan-Bai; Chen, Y.H.; Chen, Yuan-Bo; Chen, Y.G.; Chen, Yi- Han; Chen, Yen- Chu; Chen, Ya- Qing; Chen, Y.M.; Chen, Ying-tang; Chen, Ya-Qing; Chen, Yong-Zhong; Chen, Yan-Jun; Chen, Yu-feng; Chen, Yen-Ann; Chen, Yichang; Chen, Yen-Chu; Chen, Yingtang; Chen, Yuan; Chen, Y.-J.; Chen, Y. Judy; Chen, Y.P.; Chen, Yu-Tung; Chen, YuQin; Chen, Y.W.; Chen, Yan-Li; Chen, Ya-Nan; Chen, Ying-Tian; Chen, Y.-S.; Chen, Y.D.; Chen, Y.-M.; Chen, Yan-Mei; Chen, YanPing; Chen, Yu Chun; Chen, Y.L.; Chen, Yu-peng; Chen, Yan-Mei.;

Ellis, John R. (903 papers)

This is me. Verify my publication list.

Name variants

Ellis, John R. (831)
Ellis, John (36)
Ellis, J. (10)
Ellis, John R., (ed.) (9)
Ellis, John R., (Ed.) (7)
Ellis, J.R. (6)
Ellis, Jonathan R. (2)
Ellis, John, (ed.) (1)
Ellis, John.R. (1)

Affiliations

CERN (823)
SLAC (37)
Caltech (9)

Frequent co-authors

Nanopoulos, Dimitri V. (222)
Olive, Keith A. (104)

Frequent keywords

supersymmetry (297)
Higgs particle: mass (132)
dark matter (128)

Papers

All papers (903)
Report (903)
Published (606)

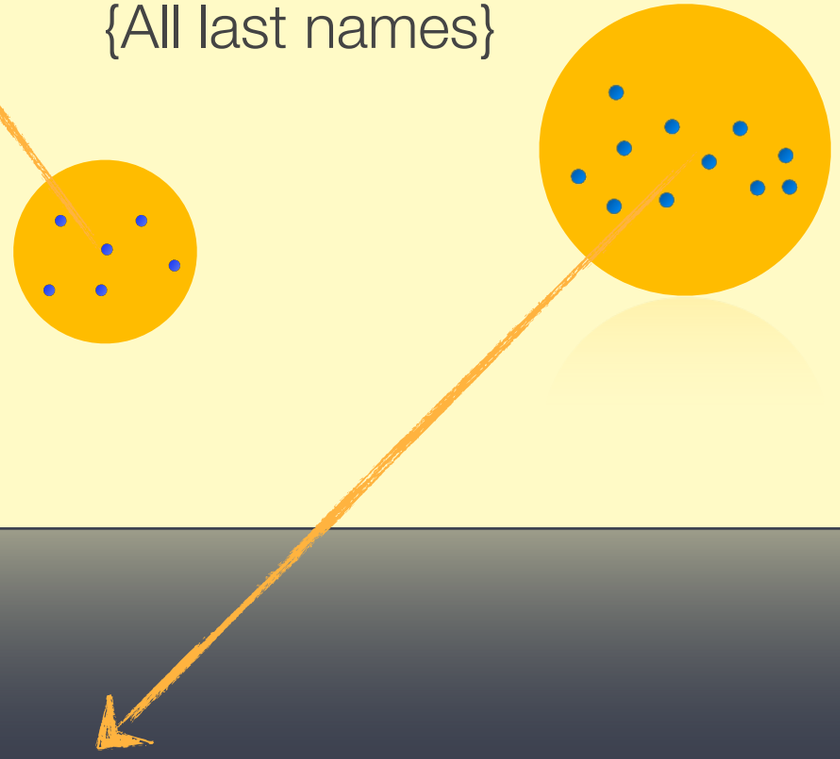
Citations:

Citation summary results	All papers	Published only
Total number of citable papers analyzed:	729	606
Total number of citations:	51,029	48,962
Average citations per paper:	70.0	80.8
Breakdown of papers by citations:		
Renowned papers (500+)	11	11

Ramirez-Ruiz; Ramirez Ruiz; Ramirezruiz

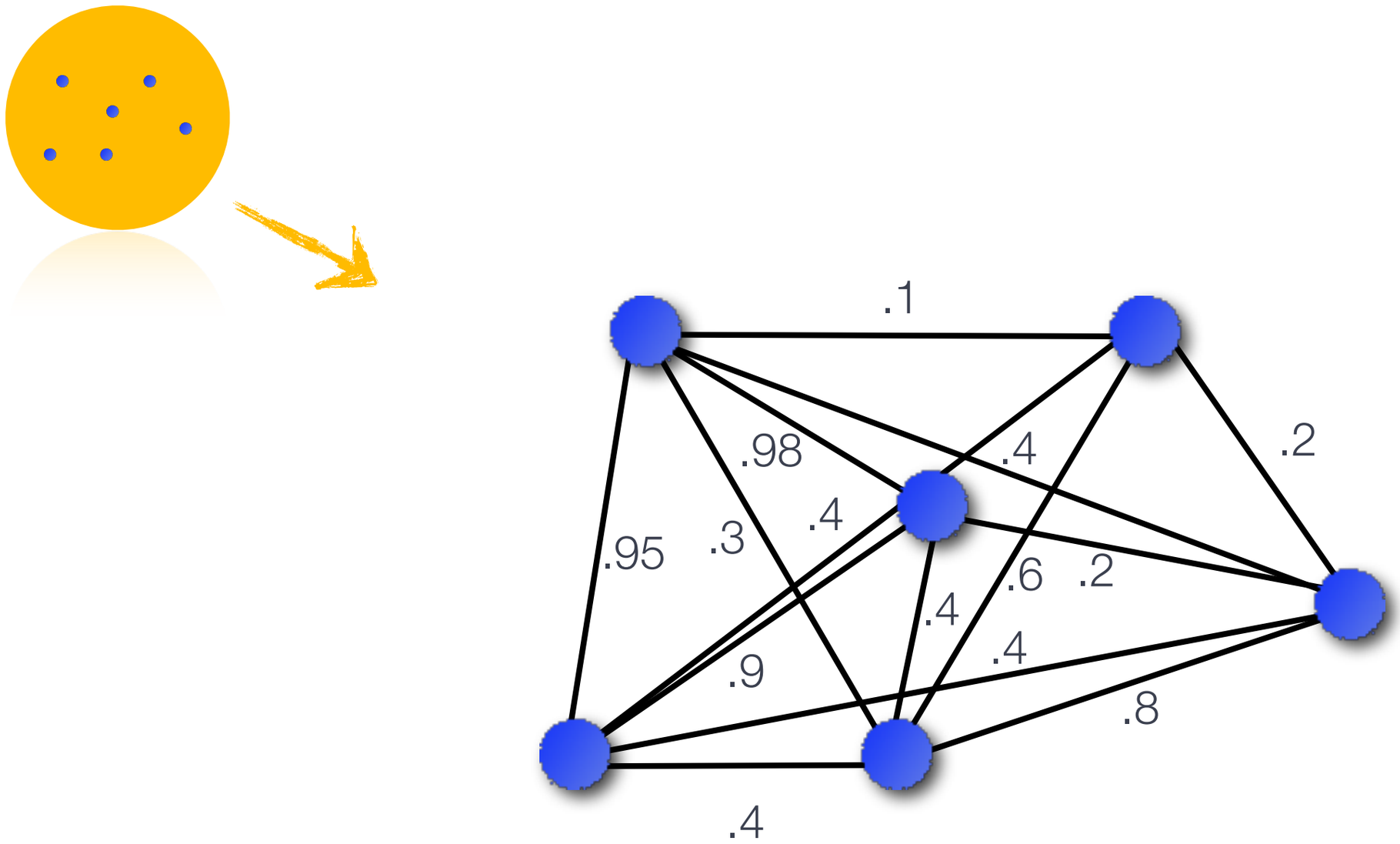
Ellis

{All last names}



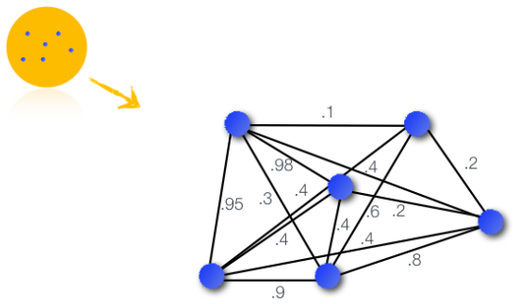
Chen

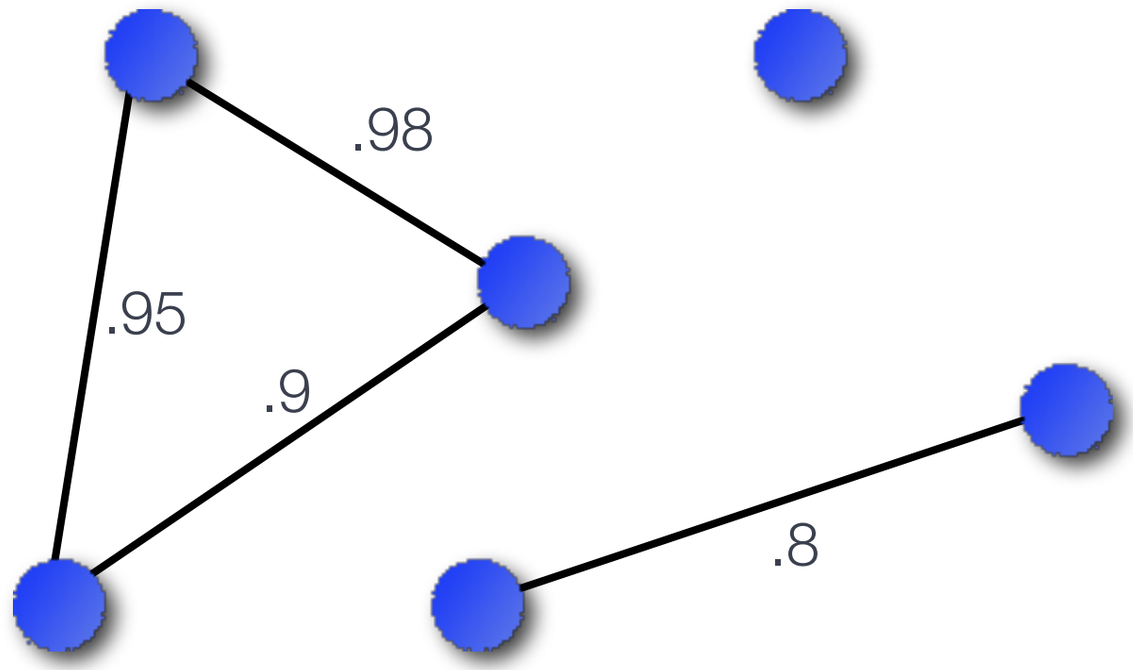
t’Hooft; ‘t Hooft; thooft; t’ hooft



Create graph

from last name cluster





Remove weak links

and compare single nodes to strongly connected clusters

Distance Measures

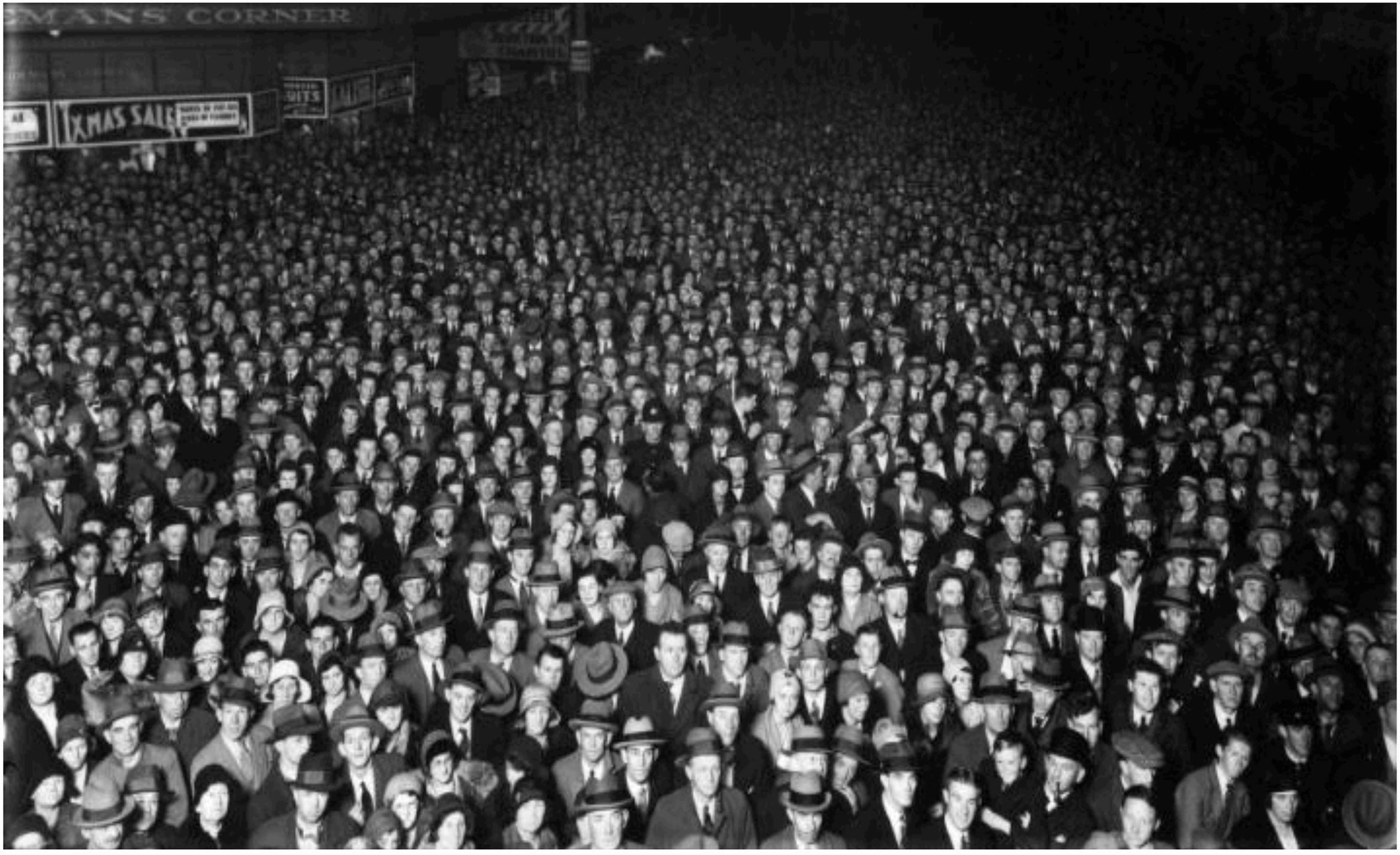
- Co-authorship
- Keywords
- Top Citations
- Name
- Date
- Affiliations

$$\frac{\left(\sum_{i=1}^{n_s} w_i f_i^s(AS_1, AS_2)\right) \times \left(\prod_{i=1}^{n_p} w_i f_i^p(AS_1, AS_2)\right)}{max(n^+, 1)}$$

Algorithm stats

- 900’377 Documents
  - 6’384’627 author signatures
  - 248’946 identified individuals

- Humanly conducted validation:
  - 16,594 document assignments have been evaluated
  - 16,012 assignments have been tagged as being correct



“Crowd Sourcing”

Attribute papers for: John.R.Ellis.1

Navigation: Run paper attribution for another author

Names variants:

Ellis, Jonathan R. (2); Ellis, J. R. (6); ELLIS, J. (10); Ellis, John (37); Ellis, John R. (848);

Papers (903) | Papers removed from this profile (0)

Select All | Select None | Invert Selection | Hide successful claims

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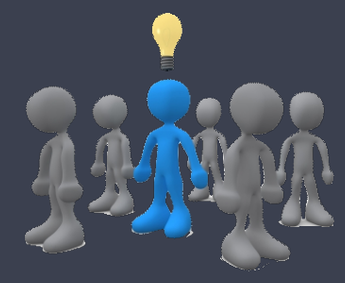
Search:

	Paper Short Info	Author Name	Affiliation	Actions
☐	**Patterns of lepton flavor violation motivated by decoupling and sneutrino inflation** Piotr H. Chankowski (Warsaw U.), John R. Ellis (CERN), Stefan Pokorski (Warsaw U.), Martti Raidal (NICPB, Tallinn), Krzysztof Turzynski (Warsaw U.).	Ellis, John R.	CERN	Yes, this paper is by this person. No, this paper is *not* by this person Assign to another person
☐	**CHEEP: AN e-p FACILITY IN THE SPS** CHEEP Study Groups Collaboration (John R. Ellis *et al.*).	Ellis, John R.	CERN	Yes, this paper is by this person. No, this paper is *not* by this person Assign to another person

Claim-My-Paper Interface

Claiming Stats...

- Targeted mailing to ~300 people:
  - Within 10 hours: over 25% response rate
  - After one week: 50% response rate
- Overall claims since end of March:
  - 644 author clusters
  - 34’925 papers
- Overall algorithm accuracy measured on these claims: 95%



Authormagic

- Proof of concept of user engagement for future projects...
- Automated creation of publication lists/academic biographies
- Precise author centered publication and citation data for meaningful bibliometrics
- Reuse of user decisions for metadata updates and new papers

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2	四种辅音韵尾 汉语在
1	$
1	abelian directions
1	Garamasala Dvali
1	gravity
1	Indïræ Papadimitriou
1	infrared
1	Κι του διάσημα προσπαθήσει
1	Бы или удовольствием консалтинговые

Home > > A Large mass hierarchy from a small extra dimension

Information | References | Citations | **Keywords** | Discussion | Usage sta

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et al - MIT-CTP-2860PUPT-1860BUHEP-99-9hep-ph/

Display keywords: [tag cloud] [list] [XML]
Sort keywords: [by occurrences] [by related documents]

Unweighted composite keywords:
dimension: 5
Einstein equation: solution
graviton: excited state
mass: hierarchy
space-time: background
Unweighted single keywords:
membrane model

Crowd-Sourced Tagging of Papers

Create new figure

100%

arXiv:hep-lat/0002023v2 22 Mar 2000

Domain-Wall Induced Quark Masses in Topologically-Nontrivial Background

Vakeriya Gadiyak, Xiangdong Ji, Chulwoo Jung
Department of Physics
University of Maryland
College Park, Maryland 20742

(UMD PP#00-055 DOE/ER/40762-201 February 2000)

Abstract

In the domain-wall formulation of chiral fermion, the finite separation between domain-walls (L_s) induces an effective quark mass ($m_{\rm eff}$) which complicates the chiral limit. In this work, we study the size of the effective mass as the function of L_s and the domain-wall height m_0 by calculating the smallest eigenvalue of the hermitian domain-wall Dirac operator in the topologically-nontrivial background fields. We find that, just like in the free case, $m_{\rm eff}$ decreases exponentially in L_s with a rate depending on m_0. However, quantum fluctuations amplify the wall effects significantly. Our numerical result is consistent with a previous study of the effective mass from the Gell-Mann-Oakes-Renner relation.

Current figure:

Figure image:

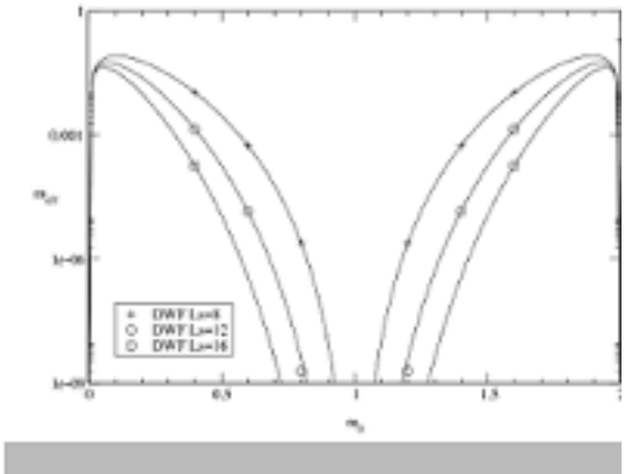


Figure coordinates:

(x = 118, y = 74, width = 374, height = 262)

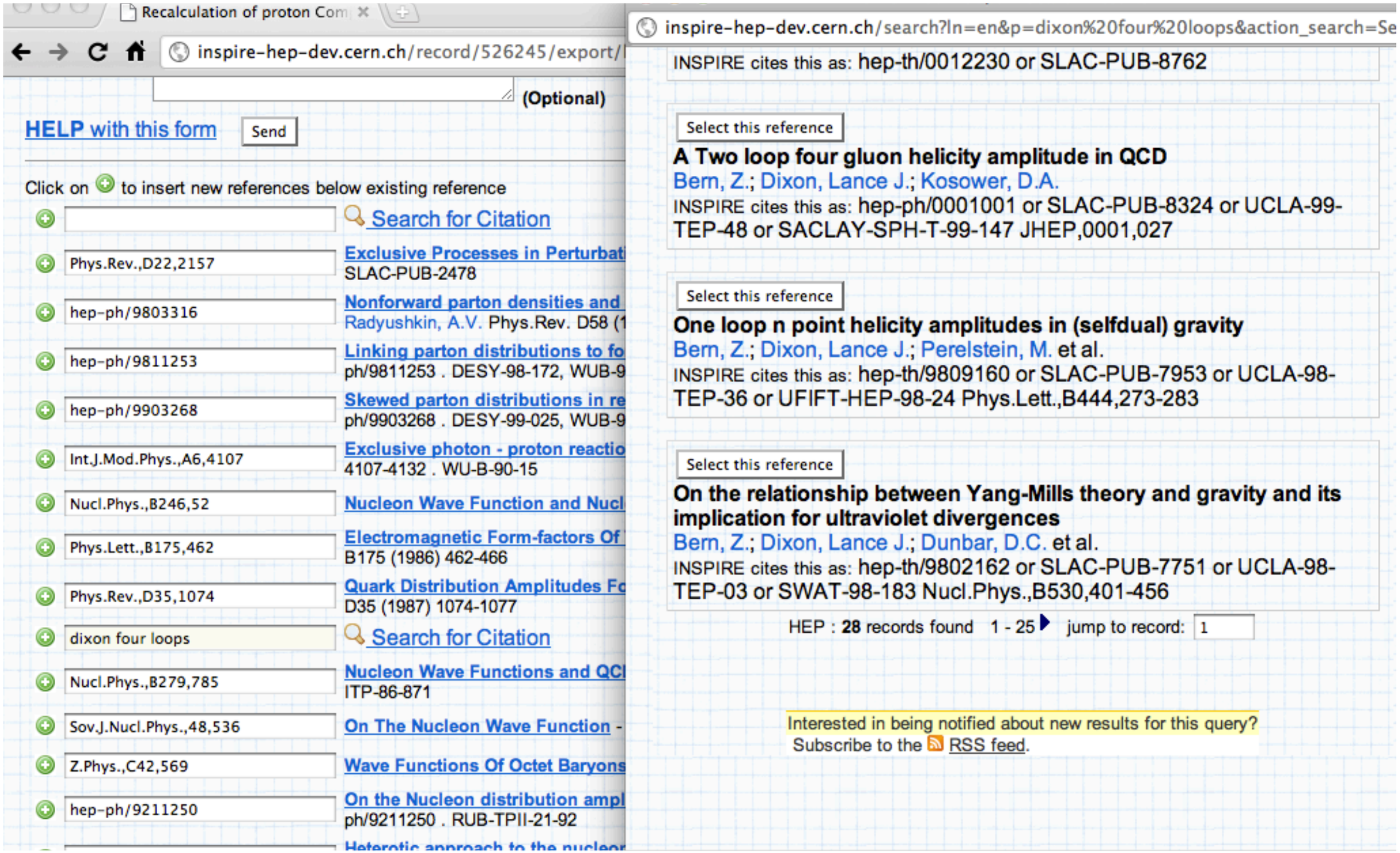
Select the boundary

Select caption

Caption text:

TODO: Text should be automaticaly extracted from the selected caption and should be inputed

Crowd-Sourced Plot Extraction



Crowd-Sourced Curation of Citations

Authormagic

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- Reuse of user decisions for metadata updates and new papers

Thank You!

Henning Weiler <henning.weiler@cern.ch>