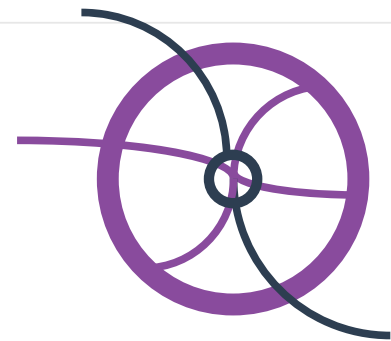




HEPData

and νA scattering

Graeme Watt (IPPP Durham)

“IPPP/NuSTEC topical meeting on neutrino-nucleus scattering”

IPPP Durham, 20th April 2017

<https://hepdata.net>

Email: info@hepdata.net

 Follow @HepData



[arXiv:1704.05473](https://arxiv.org/abs/1704.05473)



What is HEPData?

- Unique *open-access* repository for scattering **data** from more than 8000 experimental **HEP** (“hep-ex”) papers.
- “**Level 1**” according to DPHEP classification [[1205.4667](#)], e.g. numbers for final data points plotted in publications.
- Traditional focus on production cross sections etc., but in recent years also include data from LHC **searches**.
- Based in **I**nstitute for **P**article **P**hysics **P**henomenology (**IPPP**) at Durham University (UK), going back to 1970s.
- Funded by UK **S**cience & **T**echnology **F**acilities **C**ouncil (**STFC**). Current grant to support two staff until 2019.

HEPData staff in Durham



Graeme Watt



Mike Whalley



Joanne Benthham



Frank Krauss

- **Graeme Watt:** Database Manager (2013-)
- *Mike Whalley:* Previous Database Manager (1982-2016)
- **Joanne Benthham:** Administrative Assistant (1995-)
- *Frank Krauss:* Principal Investigator (2014-)

Close collaboration with Open Access group at CERN (2014-)

HEPData redevelopment

hepdata.cedar.ac.uk

- Originally developed by Andy Buckley and Mike Whalley:
“*HepData reloaded: reinventing the HEP data archive*”,
PoS ACAT2010 (2010) 067 [[arXiv:1006.0517](https://arxiv.org/abs/1006.0517)].
- Legacy site, hosted in Durham, soon to be switched off.

hepdata.net Code: <https://github.com/HEPData>

- Lead developer: Eamonn Maguire (CERN, 03/2015-10/2016).
- Overlay on Invenio v3 digital library software.
- Production site, hosted on CERN OpenStack infrastructure.

Old data “input” format

```
*dataset:
*location: Figure 5
*dscomment: Total  $\nu_\mu$  CC1 $\pi^+$  cross section on water in
the reduced phase-space of  $p_{\pi^+} > 200$  MeV/c,  $p_\mu > 200$ 
MeV/c,  $\cos(\theta_{\pi^+}) > 0.3$  and  $\cos(\theta_\mu) > 0.3$ .
The T2K data point is placed at the  $\nu_\mu$  flux mean energy.
*reackey: NUMU NUCLEON --> MU- PI+ X
*obskey: SIG
*qual: COS(THETA(MU)) : > 0.3
*qual: COS(THETA(PI)) : > 0.3
*qual: P(MU) IN MEV : > 200
*qual: P(PI) IN MEV : > 200
*qual: RE : NUMU NUCLEON --> MU- PI+ X
*xheader:  $E_\nu$  IN GeV
*yheader:  $\sigma(E_\nu)$  IN  $10^{-40}$  cm2 / nucleon
*data: x : y
0.8; 4.25 +- 0.48 (DSYS=1.56);
*dataend:
```

<http://hepdata.cedar.ac.uk/view/ins1465650/d1/input>

Table 1 (Figure 5.) or as: input, plain text, AIDA, PyROOT, YODA, ROOT, mpl, DMelt, MarcXML or YAML
Total ν_μ CC1 π^+ cross section on water in the reduced phase-space of $p_{\pi^+} > 200$ MeV/c, $p_\mu > 200$ MeV/c, $\cos(\theta_{\pi^+}) > 0.3$ and $\cos(\theta_\mu) > 0.3$. The T2K data point is placed at the ν_μ flux mean energy.

reaction keywords: [NUMU NUCLEON --> MU- PI+ X]
observable keywords: [SIG]

COS(THETA(MU))	> 0.3
COS(THETA(PI))	> 0.3
P(MU)	> 200 MeV
P(PI)	> 200 MeV
RE	NUMU NUCLEON --> MU- PI+ X
E_ν IN GeV	$\sigma(E_\nu)$ IN 10^{-40} cm ² / nucleon
0.8	4.25 ± 0.48 (stat) ± 1.56 (sys)
Plot SelectPlot	

- All data needed to be transformed into a standard “input” text format.
- Metadata for each table followed by data points in a structured format.
- *reackey and *obskey keywords can be used for searching database.
- Flexible table format: any number of rows and ‘x’ or ‘y’ columns possible.
- Limited support to attach and link auxiliary files stored in a web directory.

New YAML text format

<http://hepdata.cedar.ac.uk/view/ins1465650/d1/yaml>

```
---
name: 'Table 1'
label: 'Data from Figure 5'
description: |
    Total  $\nu_\mu$  CC  $\pi^+$  cross section on water in the reduced phase-space of
 $p_{\pi^+} > 200$  MeV/c,  $p_\mu > 200$  MeV/c,  $\cos(\theta_{\pi^+}) > 0.3$  and  $\cos(\theta_\mu) > 0.3$ . The T2K data point is placed at the  $\nu_\mu$  flux mean
energy.
keywords:
  - {name: reactions, values: ['NUMU NUCLEON --> MU- PI+ X']}
  - {name: observables, values: ['SIG']}
  - {name: phrases, values: ['Inclusive', 'Integrated Cross Section', 'Cross
Section', 'Muon Production', 'Charged Current', 'Deep Inelastic Scattering']}
additional_resources:
independent_variables:
  - header: {name: ' $E_\nu$ ', units: 'GeV'}
    values:
      - {value: 0.8}
dependent_variables:
  - header: {name: ' $\sigma(E_\nu)$ ', units: ' $10^{-40}$  cm2 / nucleon'}
    qualifiers:
      - {name: 'COS(THETA(MU))', value: '> 0.3'}
      - {name: 'COS(THETA(PI))', value: '> 0.3'}
      - {name: 'P(MU)', value: '> 200', units: 'MEV'}
      - {name: 'P(PI)', value: '> 200', units: 'MEV'}
      - {name: 'RE', value: 'NUMU NUCLEON --> MU- PI+ X'}
    values:
      - value: 4.25
      errors:
        - {symerror: 0.48, label: 'stat'}
        - {symerror: 1.56, label: 'sys'}
```

YAML: YAML Ain't Markup Language

What It Is: YAML is a human friendly data serialization standard for all programming languages.

New keyword
(+ cmenergies)

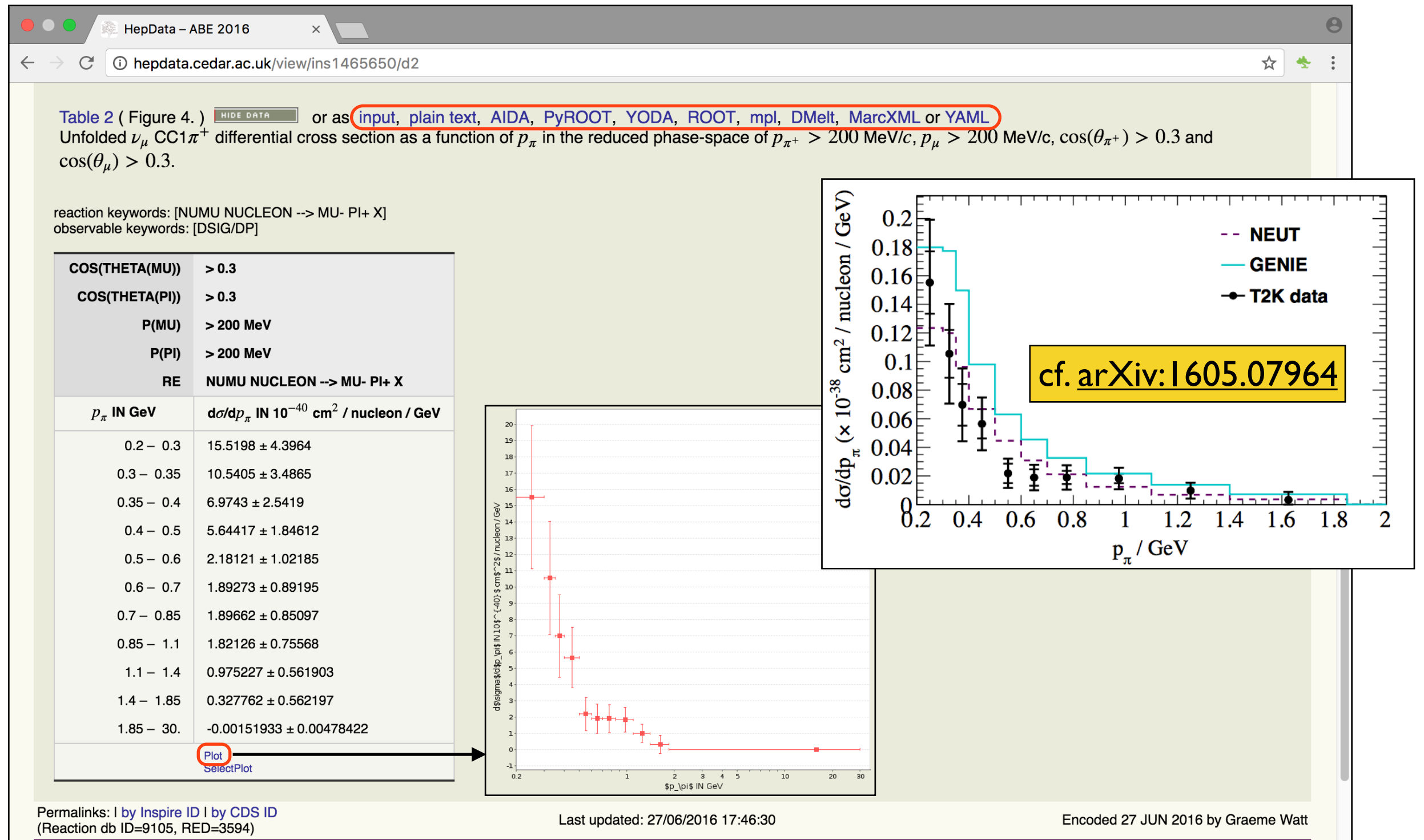
Auxiliary files

<https://hepdata.net/record/ins1465650>

COS(THETA(MU))	> 0.3
COS(THETA(PI))	> 0.3
P(MU)	> 200 MEV
P(PI)	> 200 MEV
RE	NUMU NUCLEON --> MU- PI+ X
E_ν [GeV]	$\sigma(E_\nu)$ [10^{-40} cm ² / nucleon]
0.8	4.25 $\pm$ 0.48 stat $\pm$ 1.56 sys

- Data from existing HepData database was exported to the new YAML format for migration to the new system.

Example table on old site



- Automatic plots and export to various output formats.

Example table on new site

HEPData

Secure https://hepdata.net/record/ins1465650

HEPData

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Abe, K. et al.

Last updated on 2016-06-27 17:46

Accessed 39 times

Cite

JSON

Hide Publication Information

First Measurement of the Muon Neutrino Charged Current Single Pion Production Cross Section on Water with the T2K Near Detector

The collaboration

Abe, K. , Andreopoulos, C. , Antonova, M. , Aoki, S. , Ariga, A. , Assylbekov, S. , Autiero, D. , Ban, S. , Barbi, M. , Barker, G.J.

No Journal Information, 2016

http://dx.doi.org/10.17182/hepdata.73182

INSPIRE Record

HepData

Resources

Abstract (data abstract)

KEK. The T2K off-axis near detector, ND280, is used to make the first differential cross section measurements of muon neutrino charged current single positive pion production on a water target at energies ~ 0.8 GeV. The differential measurements are presented as a function of muon and pion kinematics, in the restricted phase-space defined by $p_{\pi^+} > 200$ MeV/c, $p_{\mu^-} > 200$ MeV/c, $\cos \theta_{\pi^+} > 0.3$ and $\cos \theta_{\mu^-} > 0.3$. The total flux integrated ν_{μ} charged current single positive pion production cross section on water in the restricted

Download All

YAML

YODA

ROOT

CSV

observables

DSIG/DP

phrases

Inclusive

Differential Cross Section

Muon Production

Charged Current

reactions

NUMU NUCLEON --> MU- PI+ X

Visualize

COS(THETA(MU))	> 0.3
COS(THETA(PI))	> 0.3
P(MU)	> 200 MEV
P(PI)	> 200 MEV
RE	NUMU NUCLEON --> MU- PI+ X
p_{π} [GeV]	$d\sigma/dp_{\pi}$ [10^{-40} cm ² / nucleon / GeV]
0.2 - 0.3	15.5198 $\pm$ 4.39636
0.3 - 0.35	10.5405 $\pm$ 3.4865
0.35 - 0.4	6.9743 $\pm$ 2.54191
0.4 - 0.5	5.64417 $\pm$ 1.84612
0.5 - 0.6	2.18121 $\pm$ 1.02185

Table 2

Data from Figure 4

10.17182/hepdata.73182.v1/t2

Unfolded ν_{μ} CC1 π^+ differential cross section as a function of p_{π} in the reduced phase-space of $p_{\pi^+} > 200$ MeV/c,...

Table 3

Data from Figure 4

10.17182/hepdata.73182.v1/t3

Unfolded ν_{μ} CC1 π^+ differential cross section as a function of $\cos \theta_{\pi}$ in the reduced phase-space of $p_{\pi^+} > 200$ MeV/c,...

Table 4

Data output formats

- YAML: native HEPData format.
- CSV: comma-separated values.
- JSON: JavaScript Object Notation.
- ROOT: binary `.root` file, not CINT script.
- YODA: for inclusion in a Rivet analysis.

<https://hepdata.net/record/ins1465650?format=yaml&table=Table2&version=1>

- `format={csv,json,root,yaml,yoda}`
- The `table` or `version` can be omitted.
- Search results can also be returned as JSON.

Searching on keywords

HEPData

Secure https://hepdata.net/search/?q=reactions%3A"NUMU+NUCLEON+-->+MU-X"+AND+observables%3ASIG&sort_order=&sort_by=date

HEPData About Submission Help Sign in

reactions:"NUMU NUCLEON --> MU- X" Search Reset search Advanced

Max results Sort by Reverse order Showing 25 of 33 results

relevance collaborations title date latest

Date

Collaboration

AACHEN-BONN-CERN-DEMOCRITOS-LONDON-OXFORD-SACLAY 2

CHARM 2

NOMAD 2

AACHEN-BONN-CERN-LONDON-OXFORD-SACLAY 1

AACHEN-BRUSSELS-CERN-ECOLE POLY-ORSAY-PADUA 1

Next 5 Show All

« 1 2 »

A precise measurement of the muon neutrino-nucleon inclusive charged current cross-section off an isoscalar target in the energy range $2.5 < E(\nu) < 40\text{-GeV}$ by NOMAD

The NOMAD collaboration Wu, Q. ; Mishra, Sanjib Ratan ; Godley, A. ; *et al.*

Phys.Lett. B660 (2008) 19-25, 2008.

Inspire Record 767013 DOI 10.17182/hepdata.50629

We present a measurement of the muon neutrino-nucleon inclusive charged current cross-section, off an isoscalar target, in the neutrino energy range $2.5 \leq E_\nu \leq 40\text{ GeV}$. The significance of this measurement is its precision,

0 data tables match query

Study of D^{*+} production in ν/μ charged current interactions in the NOMAD experiment

The NOMAD collaboration Astier, P. ; Autiero, D. ; Baldisseri, A. ; *et al.*

Phys.Lett. B526 (2002) 278-286, 2002.

Inspire Record 567771 DOI 10.17182/hepdata.49701

0 data tables match query

reactions:"NUMU NUCLEON --> MU- X" AND observables:SIG

Search and facets

The screenshot displays the HEPData search interface. The browser address bar shows the URL https://hepdata.net/search/?q=neutrino&phrases=Cross+Section&sort_by=latest. The search bar contains the query "neutrino" with a "Cross Sect..." filter applied. The results are sorted by "latest" and show 25 of 297 results. A sidebar on the left provides faceted navigation with a histogram for "Date" (1969 to 2016) and lists for "Collaboration" (L3, CDF, ATLAS, DELPHI, OPAL) and "Subject_areas" (HEP Experiment, HEP Theory). A dropdown menu for "Sort by" is open, showing options: relevance, collaborations, title, date, and latest (selected). The main content area displays the first search result: "Measurement of electron neutrino quasielastic and quasielasticlike scattering on hydrocarbon at $\langle E_\nu \rangle = 3.6$ GeV" by The MINERvA collaboration, published in Phys.Rev.Lett. 116 (2016) 081802, 2016. Below the title, it lists the authors (Wolcott, J.; Aliaga, L.; Altinok, O.; et al.) and provides links to the Inspire Record (1393997) and DOI (10.17182/hepdata.75538). The abstract describes the first direct measurement of electron neutrino quasielastic and quasielasticlike scattering on hydrocarbon in the few-GeV region. A table match query is also shown. The second result is partially visible: "Search for new resonances in events with one lepton and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector" by The ATLAS collaboration.

HEPData

Secure https://hepdata.net/search/?q=neutrino&phrases=Cross+Section&sort_by=latest

HEPData

About Submission Help Sign in

neutrino Cross Sect... Search Reset search Advanced

Max results Sort by Reverse order Showing 25 of 297 results

relevance collaborations title date latest

Date

Collaboration

Subject_areas

Measurement of electron neutrino quasielastic and quasielasticlike scattering on hydrocarbon at $\langle E_\nu \rangle = 3.6$ GeV

The MINERvA collaboration Wolcott, J.; Aliaga, L.; Altinok, O.; et al.

Phys.Rev.Lett. 116 (2016) 081802, 2016.

Inspire Record 1393997 DOI 10.17182/hepdata.75538

The first direct measurement of electron neutrino quasielastic and quasielasticlike scattering on hydrocarbon in the few-GeV region of incident neutrino energy has been carried out using the MINERvA detector in the NuMI beam at Fermilab. The flux-integrated differential cross sections in the electron production angle, electron energy, and Q2 are...

1 data table match query

Table 1 The $\nu_e + \bar{\nu}_e$ flux as a function of neutrino energy from the beam simulation for the data used in this analysis. The

Search for new resonances in events with one lepton and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector

The ATLAS collaboration Aaboud, Morad; Aad, Georges; Abbott, Brad; et al.

<https://hepdata.net/search/?q=neutrino>

DOIs and versioning

The screenshot shows the HEPData website interface. At the top, the browser address bar displays the URL <https://hepdata.net/record/ins1492320?version=2>. The HEPData logo and search bar are visible. The record title is "Search for triboson $W^\pm W^\pm W^\mp$ production in pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector". The record is attributed to "The ATLAS collaboration" and dated "No Journal Information, 2016". A DOI link <http://dx.doi.org/10.17182/hepdata.76728.v2> is highlighted with a red circle. Below the abstract, there are buttons for "INSPIRE Record", "HepData", and "Resources". The record includes several data tables. "Table 1" is titled "Data from table 6 located Page 15 of preprint" and contains the DOI [10.17182/hepdata.76728.v2/t1](https://hepdata.net/record/ins1492320?version=2), which is also highlighted with a red circle. "Table 2" and "Table 3" are also listed. A "Version 2" dropdown menu is visible, indicating the current version of the record. A blue banner at the top right states "Version 2 modifications: Typo Corrections". The main content area displays a table of measured fiducial and total cross sections, with columns for "cmenergies", "observables", "phrases", and "reactions". The table includes data for $\sqrt{s} = 8000.0$ GeV and cross sections for various decay channels. A "Visualize" button is present next to the table. The abstract text describes the measurement of the triboson $W^+W^-W^+$ production cross-section using two decay channels: fully-leptonic $W^+W^-W^+ \rightarrow l^+\nu l^+\nu l^+\nu$ and semi-leptonic $W^+W^-W^+ \rightarrow l^+\nu l^+\nu jj$ (with $l=e,\mu$) in proton-proton collision data corresponding to an integrated luminosity of 20.3 fb $^{-1}$ at a centre of-mass energy of 8 TeV with the ATLAS detector at the Large Hadron Collider. Limits are also sets on WWWW anomalous quartic gauge couplings.

- DOIs minted for whole record and each table.

Links from inspirehep.net

HEP

1 records found

Search took 0.12 seconds.

1. **First measurement of the muon neutrino charged current single pion production cross section on water with the T2K near detector**

T2K Collaboration (K. Abe (Tohoku U. & Tokyo U., ICRR & Tokyo U., IPMU) *et al.*). May 25, 2016. 11 pp.

Published in **Phys.Rev. D95 (2017) no.1, 012010**

DOI: [10.1103/PhysRevD.95.012010](https://doi.org/10.1103/PhysRevD.95.012010)

e-Print: [arXiv:1605.07964](https://arxiv.org/abs/1605.07964) [hep-ex] | [PDF](#)

[References](#) | [BibTeX](#) | [LaTeX\(US\)](#) | [LaTeX\(EU\)](#) | [Harvmac](#) | [EndNote](#)

[CERN Document Server](#); [ADS Abstract Service](#); [Link to Fulltext](#)

Data: [INSPIRE](#) | [HepData](#)

[Detailed record](#) - [Cited by 5 records](#)

INSPIRE

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HEP :: HEPNames :: INSTITUTIONS :: CONFERENCES :: JOBS :: EXPERIMENTS :: JOURNALS :: HELP

Information Citations (6) Files

Data from Table 1 from: First Measurement of the Muon Neutrino Charged Current Single Pion Production Cross Section on Water with the T2K Near Detector

Abe, K. (Tohoku U.; Tokyo U., IPMU); Andreopoulos, C. (Rutherford); Antonova, M. (Moscow, INR); Aoki, S. (Kobe U.); Ariga, A. (Bern U.); Assylbekov, S. (Colorado State U.); Autiero, D. (CERN); Ban, S. (KEK, Tsukuba); Barbi, M. (Regina U.); Barker, G.J. (Warwick U.); Barr, G. (Oxford U.); Bartel-Friburg, P. (Paris U., VI-VII); Batkiewicz, M. (Cracow, INP); Bay, F. (Zurich, ETH); Berardi, V. (Bari U.; INFN, Bari); Berkman, S. (British Columbia U.); Bhadra, S. (York U., Canada); Binstock, S.; Blondel, A. (Ecole Polytechnique); Bolognesi, S. (Saclay, SPHT); Bordoni, S. (Barcelona, IFAE); Boyd, S.B. (Warwick U.); Brailsford, D. (Imperial Coll., London); Bravar, A. (Geneva U.); Bronner, C. (Kyoto U.) [...] [Show all 342 authors](#)

Cite as: (2016) HepData, <http://doi.org/10.17182/hepdata.73182.v1/t1>

Description: Total ν_μ CC $1\pi^+$ cross section on water in the reduced phase-space of $p_{\pi^+} > 200$ MeV/c, $p_\mu > 200$ MeV/c, $\cos(\theta_{\pi^+}) > 0.3$ and $\cos(\theta_\mu) > 0.3$. The T2K data point is placed at the ν_μ flux mean energy.

This dataset complements the following publication:
[First measurement of the muon neutrino charged current single pion production cross section on water with the T2K near detector](#)

Record added 2017-04-03, last modified 2017-04-03

Export
BibTeX, EndNote, LaTeX(US), LaTeX(EU), Harvmac, MARC, MARCXML, NLM, DC

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Information References Citations Files Plots Data

First measurement of the muon neutrino charged current single pion production cross section on water with the T2K near detector
- T2K Collaboration (Abe, K. *et al.*) Phys.Rev. D95 (2017) no.1, 012010 arXiv:1605.07964 [hep-ex]

THIS DATA COMES FROM DURHAM HEPDATA PROJECT

SUMMARY:

KEK. The T2K off-axis near detector, ND280, is used to make the first differential cross section measurements of muon neutrino charged current single positive pion production on a water target at energies ~ 0.8 GeV. The differential measurements are presented as a function of muon and pion kinematics, in the restricted phase-space defined by $p_{\pi^+} > 200$ MeV/c, $p_{\mu^-} > 200$ MeV/c, $\cos \theta_{\pi^+} > 0.3$ and $\cos \theta_{\mu^-} > 0.3$. The total flux integrated ν_μ charged current single positive pion production cross section on water in the restricted phase-space is measured to be $\langle \sigma \rangle_\phi = 4.25 \pm 0.48$ (stat) ± 1.56 (syst) $\times 10^{-40}$ cm²/nucleon. Data points taken from attached tar file available at <http://t2k-experiment.org/results/>.

DATASETS:

Description: Total ν_μ CC $1\pi^+$ cross section on water in the reduced phase-space of $p_{\pi^+} > 200$ MeV/c, $p_\mu > 200$ MeV/c, $\cos(\theta_{\pi^+}) > 0.3$ and $\cos(\theta_\mu) > 0.3$. The T2K data point is placed at the ν_μ flux mean energy.

[Go to the record](#)

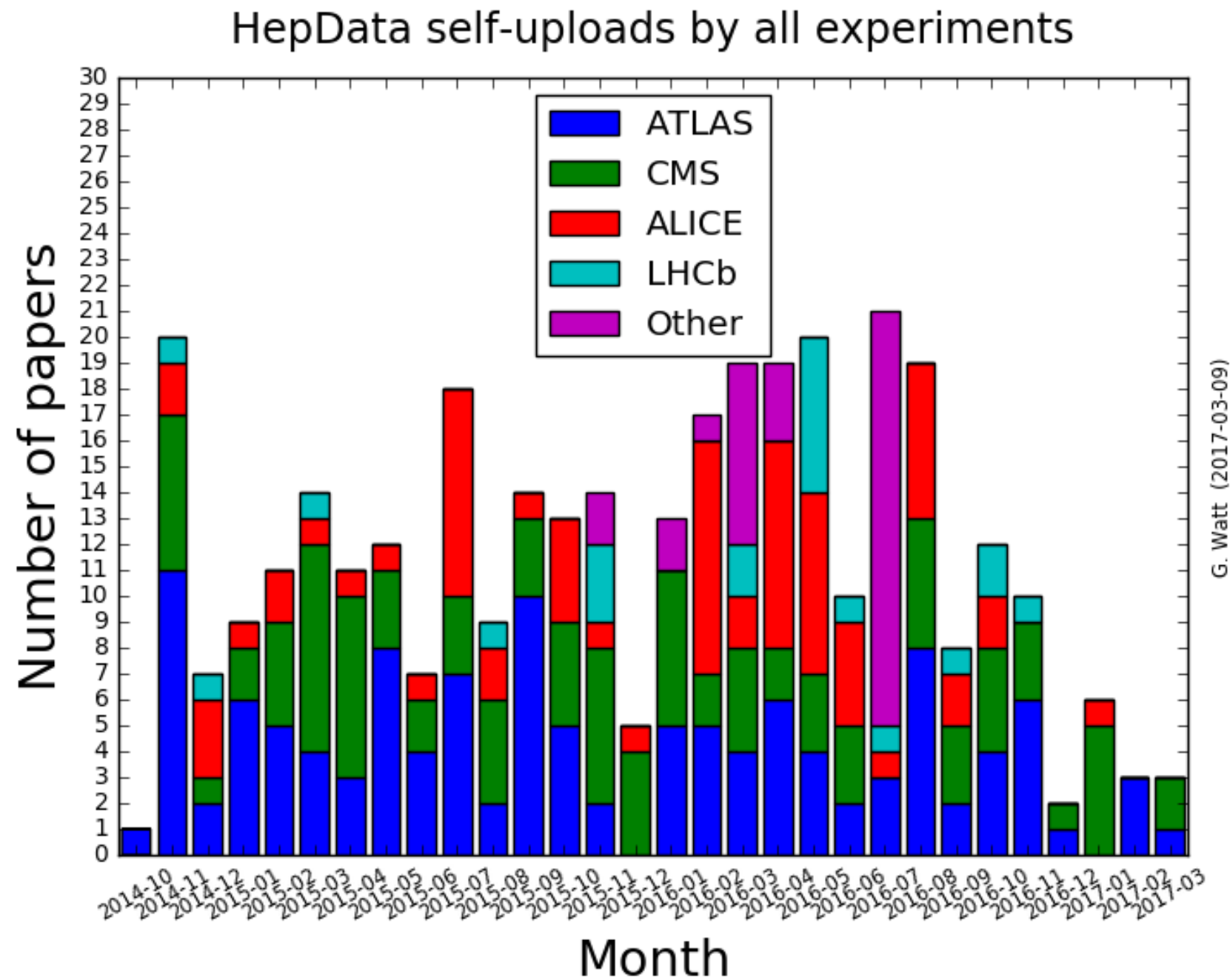
- INSPIRE is currently also being rewritten using Invenio v3.

Modes of data entry

1. Manually harvested from “hep-ex” papers.
Assistant extracts tables from .tex source files.
2. Data directly submitted by experiments.
 - Pre-2014: no guidelines on preferred format.
 - Early 2014: encourage standard “input” format.
 - Late 2014: introduce online submission system.
 - Early 2017: allow submissions from hepdata.net.

Clearly need to move more papers from 1. to 2.

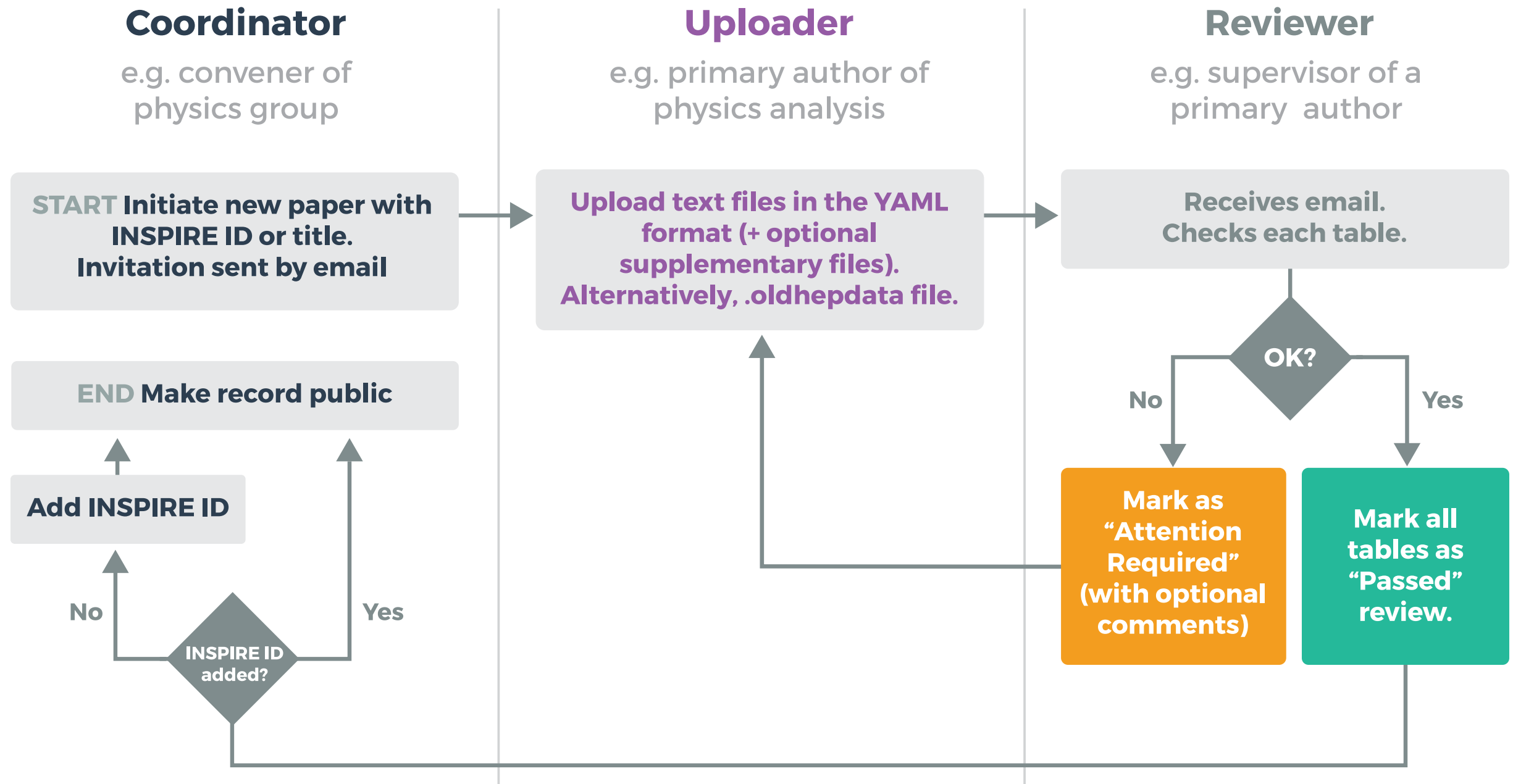
(Old) submission system usage



- Total of 347 papers: ATLAS (124), CMS (100), ALICE (71), LHCb (21).

New submission system

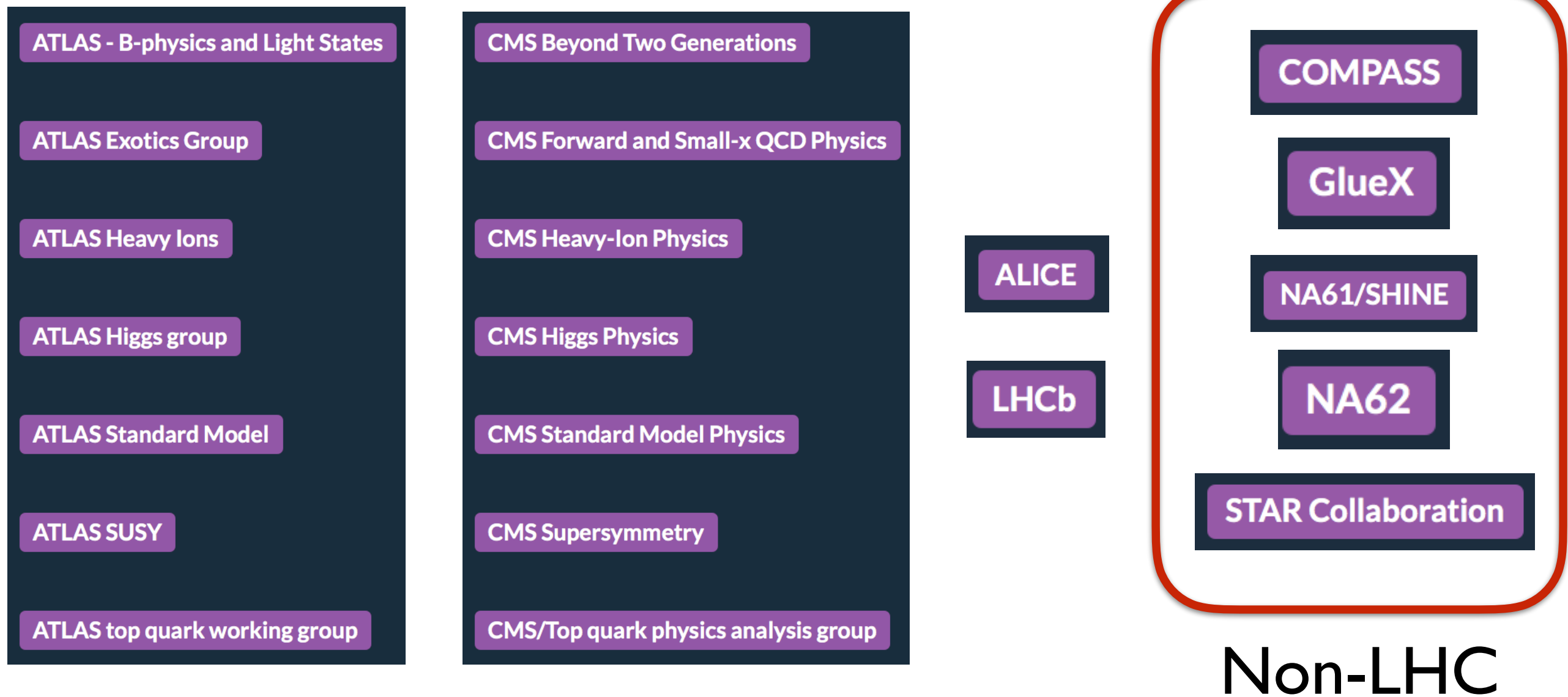
<https://hepdata.net/submission>



- Also a Sandbox for any user to test uploads without special privileges.

HEPData Coordinators

<https://hepdata.net/permissions/coordinators>



- Absence of Coordinators for neutrino experiments!

An Old Neutrino Cross Section Data Resource

<http://hepdata.cedar.ac.uk/review/neutrino/>

A Compilation of Low Energy (<30 GeV) Neutrino Cross Sections

Experiments

- [All](#)
- [Gargamelle](#)
- [BEBC](#)
- [ANL-12FT](#)
- [BNL-7FT](#)
- [FNAL-15FT](#)
- [SKAT](#)
- [CDHS](#)
- [CCFR](#)
- [CCFR](#)
- [IHEP-ITEP](#)
- [IHEP-JINR](#)
- [SERP-SPKCHM](#)
- [CHARM](#)
- [Other CERN](#)

Summary Window

	GGM	Target	Total CS	QE CS	One Pion
Eichten 1973	PL B46,274	Propane-Freon	(1.0-5.0)		
Bonetti 1977	NC 38A,260	Propane-Freon		(1.5-6.0)	
Krenz 1978	NP B135,45	Propane-Freon			
Lerche 1978	PL B78,510	Propane			(1-10.0)
Lerche 1978	NP B142,65	Propane-Freon			
Armenise 1979	NP B152,365	Propane-Freon		(1.0-6.0)	
Pohl 1979	NCL 26,332	Propane-Freon		(1.0-8.5)	
Erriquez 1979	PL B80,309	Propane-Freon	(1-8)		
Ciampolillo 1979	PL B84,281	Propane-Freon	(1000-0)		
Bolognese 1979	PL B81,393	Propane-Freon			(1.0-7.5)
Morfin 1981	PL 104B,235	Propane-Freon	(15-150)		
Isiksal 1984	PRL 52,1096	Propane-Freon			
	BEBC	Target	Total CS	QE CS	One Pion
Bosetti 1977	PL B70,273	Neon-H2	(20-200)		
Colley 1979	ZP C2,187	Neon-H2	(10-50)		
Allen 1980	NP B176,269	Hydrogen			(5-200)

We have identified the following conditions and limits for data to be included in the database:

- Charged Current (CC) and Neutral Current (NC) data from both ν and $\bar{\nu}$ interactions.
- $E_\nu \leq 30$ GeV.
- Total and Differential cross sections from:
 - Inclusive reactions ($\nu_\mu N \rightarrow \mu^- X$, etc...).
 - Quasi-Elastic (QE) reactions ($\nu_\mu n \rightarrow \mu^- p$, etc...).
 - Single π exclusive reactions (both incoherent and coherent).
 - Two π exclusive reactions.
- Fluxes (absolute normalisation and shape.)

Mike Whalley, "A New Neutrino Cross Section Database", Nucl.Phys.Proc.Suppl. 139 (2005) 241-246 [[hep-ph/0410399](#)].

Measurements

Charged-Current:

- [total](#)
- [total-numu](#)
- [total-numubar](#)

Allasia 1990	NP B343,285	Deuterium		(5.0-150.0)	(5.0-150.0)				
	BNL	Target	Total CS	QE CS	One Pion	One Pion (Coh)	Two Pion	Other	Figures
Baltay 1980	PRL 44,916	Ne-H2	(3-9)						
Fanourakis 1980	PR D21,562	Hydrogen	(1-4)	(1-4)					
Baker 1981	PR D23,2499	Deuterium		(0.7-2.2)					

- Part of legacy HepData site, soon to be switched off!

Neutrino cross sections in NUISANCE

<https://nuisance.hepforge.org/trac/browser/data>

The screenshot shows the NUISANCE repository browser interface. The browser address bar displays <https://nuisance.hepforge.org/trac/browser/data>. The page header indicates "NUISANCE is hosted by Hepforge, IPPP Durham".

On the left, a navigation menu lists various links:

- Home
- NUISANCE Review
- Talks/Publications
- Citing NUISANCE
- Getting/Building the Code
- NUISANCE Releases
- Validation Plots
- Monte-Carlo Event Files
- NUISANCE wiki
 - Usage Examples
 - Generator Tutorials
 - Adding a sample
 - Experimental Data
 - Experimental Flux
 - Winter 2016 Validation
- Source code
- Roadmap
- Issue Tracker
- Contact Developers

The main content area shows the "source: data" view. It includes a search bar, navigation tabs (Wiki, Timeline, Roadmap, **Browse Source**, View Tickets, Search), and links for Login, Preferences, Help/Guide, About Trac, Last Change, and Revision Log.

Below the navigation tabs, there is a table of source files:

Name	Size	Rev	Age	Author	Last Change
../					
ANL		b2066eb	3 months	cwret14	Changing so default ANL and BNL 1pi cuts first bin of Q2 and only goes ...
ArgoNeuT		9dfb06d	3 months	cwret14	Adding ArgoNeuT flux
BEBC		9afe280	9 months	p.stowell	added starting fitter state
BNL		d1a067d	9 days	cwret14	Finally adding in BNL CC1pi+1p W14 data Also updated the correction ...
DUNE		ed3c4c9	5 months	callum.wilkinson	Added new fluxes
Electron		6c48718	12 days	p.stowell	Tided up electron scattering plots and added sorting for Q0 bins. ...
FNAL		44141ab	2 weeks	p.stowell	Loads of stuff changed but my git got corrupted :(Everything but ...
GGM		9afe280	9 months	p.stowell	added starting fitter state
K2K		24d25da	5 months	cwret14	Adding missing K2K NC1pi0 data
MINERvA		9a864e1	5 months	lp208	Removes tabs from MINERvA data files. Quick fix, parsers should ...
MiniBooNE		b86105a	2 months	p.stowell	Added NC1pi0 classes. There is still an issue that the combined ...
T2K		b3996c0	3 months	c.wret14	Adding in the new T2K CC1pi+ H2O data from t2k-experiment.org
Winter2016		5469547	5 months	p.stowell	Added winter 2016 flux.

Below the table, there is a "View changes..." button and a note: "Note: See TracBrowser for help on using the repository browser." The footer indicates "Powered by Trac 1.0.9".

- Expand collection taking relevant data from HEPData?

Data releases from neutrino experiments

(linked from <http://nustec.fnal.gov/database/>)

- **MiniBooNE** (data releases for 13 papers):
http://www-boone.fnal.gov/for_physicists/data_release/
Contacted 29th November 2016 about HEPData.
- **T2K** (data releases for 17 papers):
<http://t2k-experiment.org/results>
HEPData: 1329784, 1408741, 1465650.
- **MINERvA** (data releases for 16 papers):
<http://minerva.fnal.gov/data-release-page/>
HEPData: 1351216, 1393997, 1405301, 1416818.
- Could neutrino experiments submit directly to HEPData?

Numbers are
INSPIRE IDs.

Summary

Email: info@hepdata.net



- **HEPData** is a repository for publication-related HEP data.
- Transition to rewritten **HEPData** site (hepdata.net) hosted at CERN. Many improvements and new features.
- Submission system widely used by four main LHC experiments. Non-LHC experiments welcome to join and upload their data.
- Questions for workshop audience:
 1. Is old HepData neutrino cross section database still in use?
<http://hepdata.cedar.ac.uk/review/neutrino/>
 2. Does **HEPData** contain any useful data for NUISANCE?
 3. Could current neutrino experiments submit to **HEPData**?
- More details: <http://arxiv.org/abs/1704.05473> (new today!)