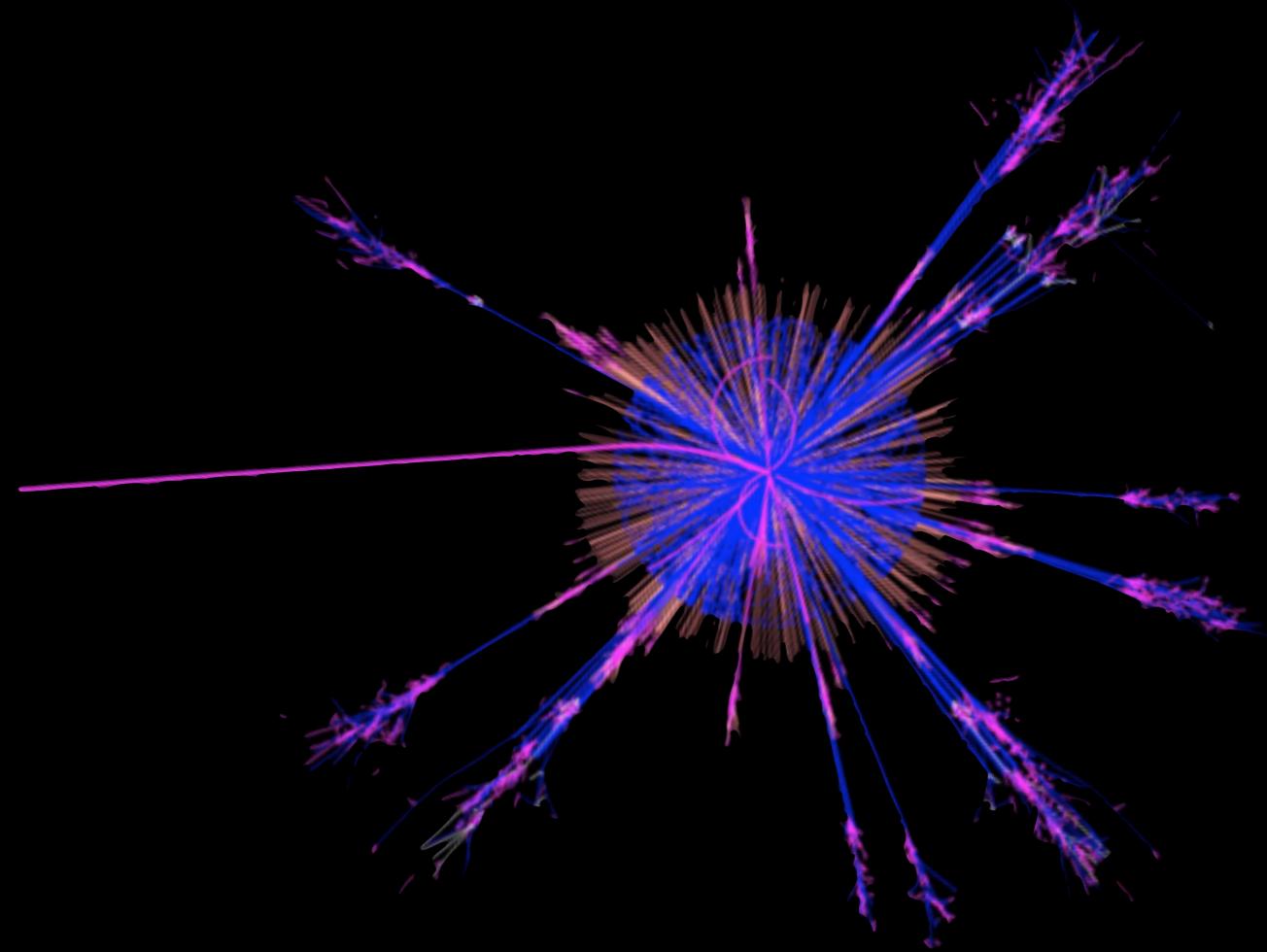




HEP DATA

@KyleCranmer

New York University
Department of Physics
Center for Data Science



THE APEX DATA

This is fabulous -- to me it feels like a break-through. We will be sure to cite the data -- I very much hope we figure out how to use it properly. The invariant mass distribution is interesting in itself.

We are very grateful for your help with this and will keep in touch.

Cheers, Richard [Lockhart]

Information Citations (8) Files

Data from Figure 3 from: Search for a New Gauge Boson in Electron-Nucleus Fixed-Target Scattering by the APEX Experiment

APEX Collaboration (Abrahamyan, S. (Yerevan Phys. Inst.) [...]) [Show all 66 authors](#)

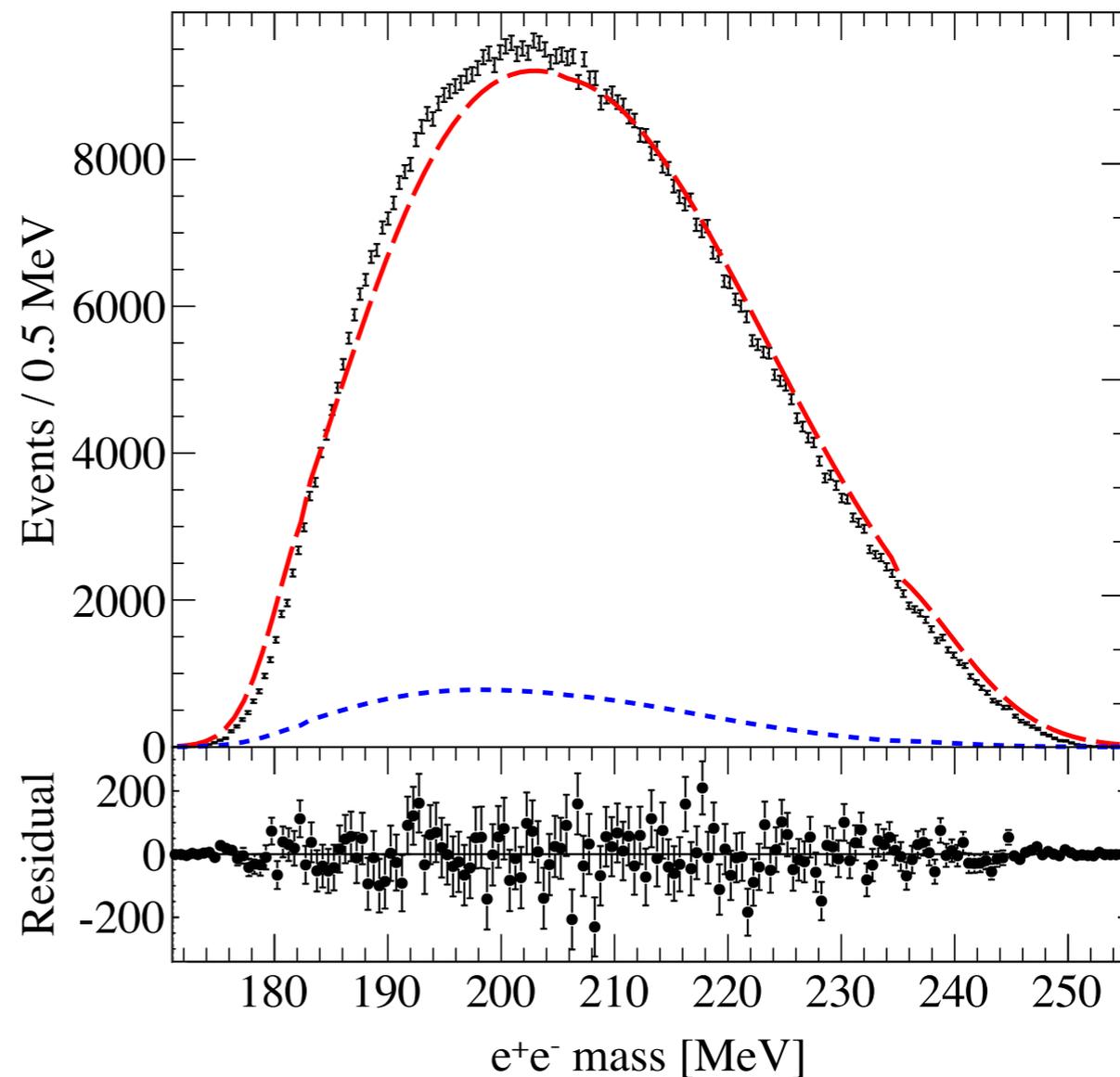
Cite as: APEX collaboration (2011) INSPIRE,
<http://doi.org/10.7484/INSPIREHEP.DATA.PH21.L5RG>

Description: The unbinned invariant mass spectrum of e^+e^- pair events in the final event sample collected by APEX. The data correspond to Figure 3 of the paper.

Note: * Temporary entry *

This dataset complements the following publication:
[Search for a New Gauge Boson in Electron-Nucleus Fixed-Target Scattering by the APEX Experiment](#)

Record created 2013-10-02, last modified 2013-10-02



RELATED PROJECT: DIANA

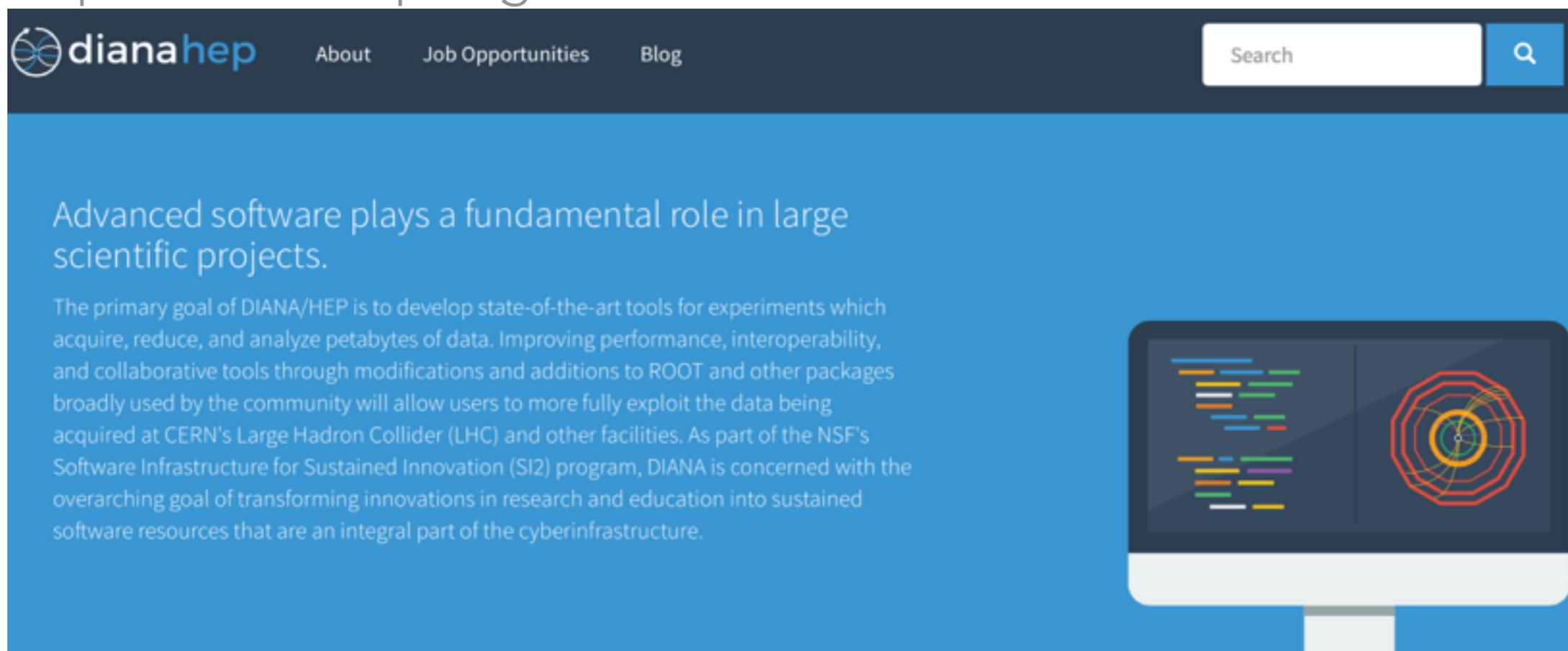
Large NSF grant to work on HEP software.
One theme is on improving integration with HEPdata etc.

ATLAS: Kyle Cranmer

CMS: Peter Elmer and Brian P. Bockelman

LHCb Michael D. Sokoloff

<http://diana-hep.org>



Collaborative Analyses

Establish infrastructure for a higher-level of collaborative analysis, building on the successful patterns used for the Higgs boson discovery and enabling a deeper communication between the



Reproducible Analyses

Streamline efforts associated to reproducibility, analysis preservation, and data preservation by making these native concepts in the tools

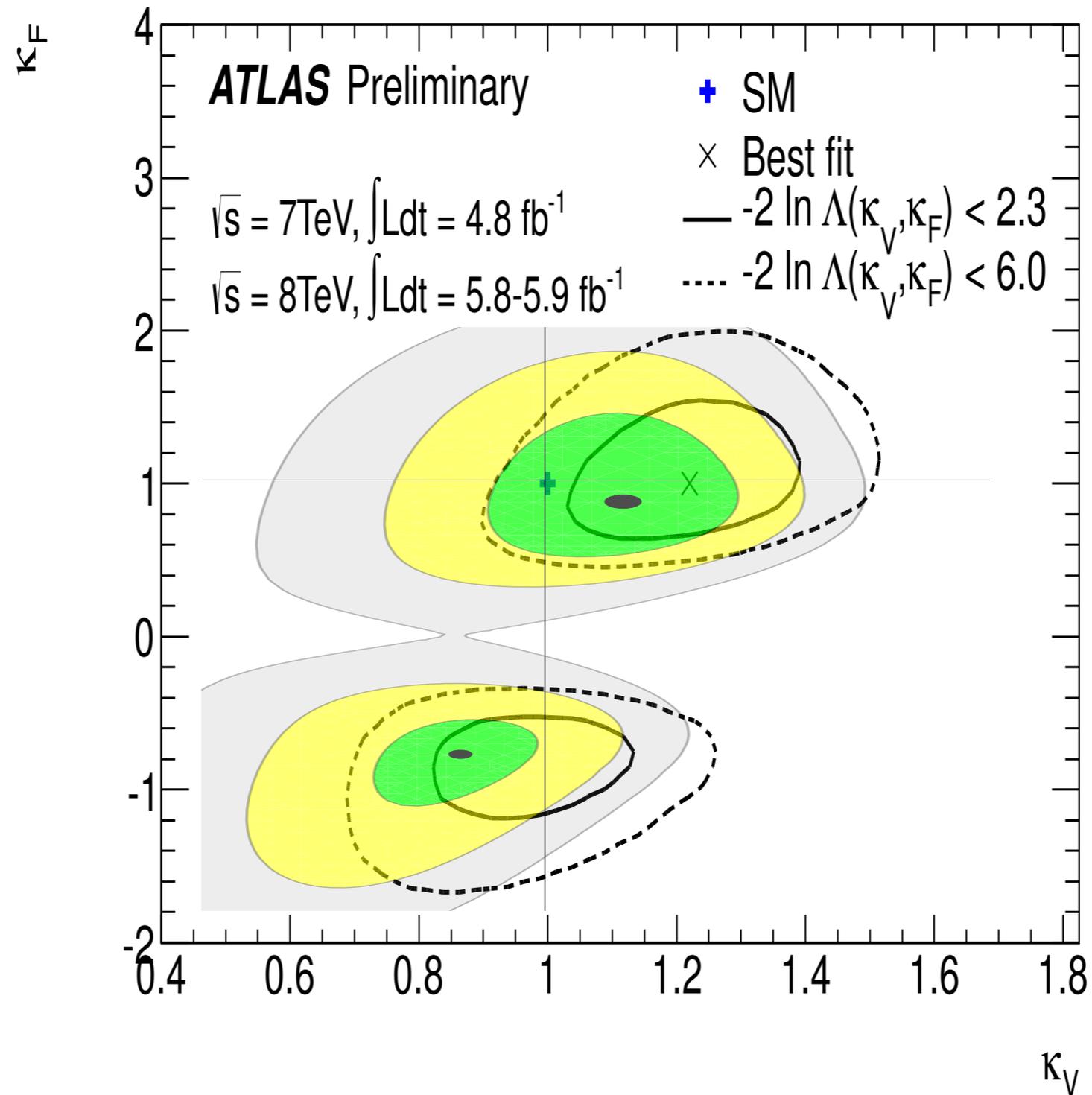


Interoperability

Improve the interoperability of HEP tools with the larger scientific software ecosystem, incorporating best practices and algorithms from other disciplines into HEP

REPRODUCIBILITY PROBLEM

Not possible for others to reproduce results from paper.

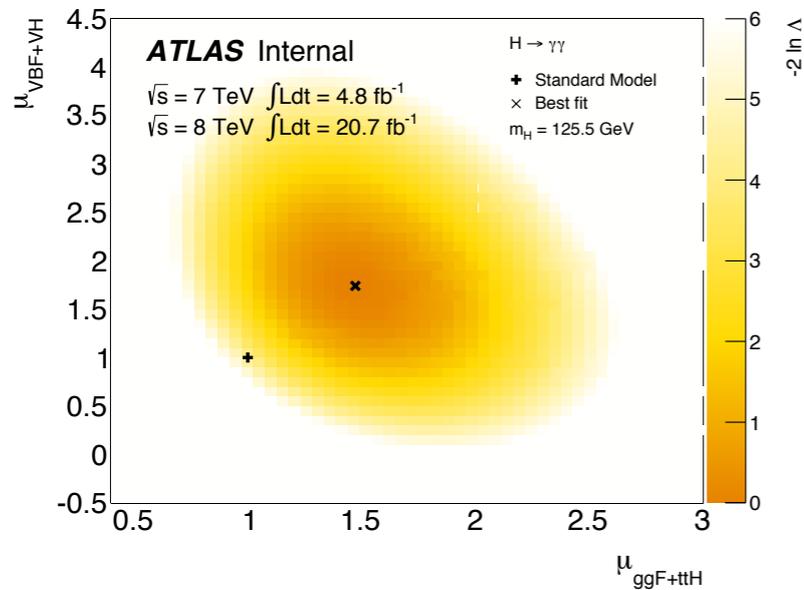


WHAT INFO AND HOW TO RETRIEVE IT

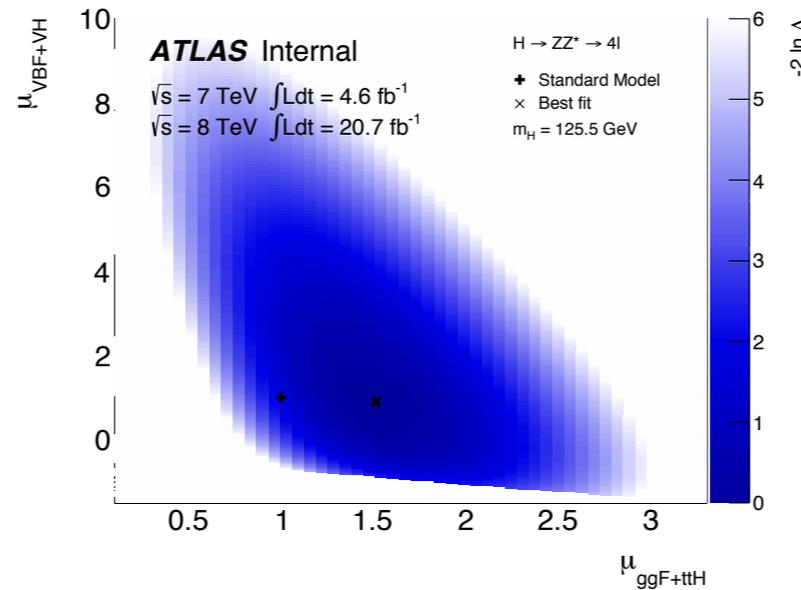
Likelihood scans

for communicating LHC Higgs results. Later ATLAS published such scans profiling over theory & experiment NPs

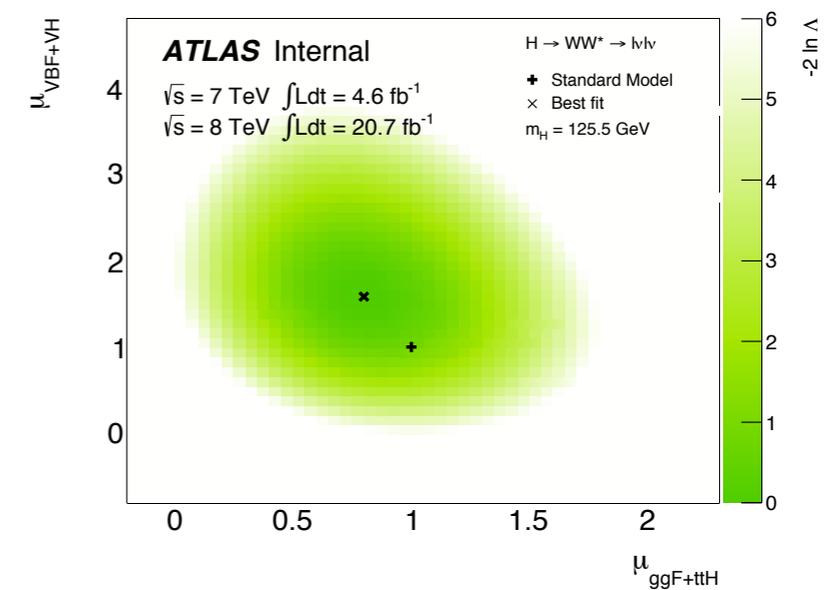
<http://doi.org/10.7484/INSPIREHEP.DATA.A78C.HK44>



<http://doi.org/10.7484/INSPIREHEP.DATA.RF5P.6M3K>



<http://doi.org/10.7484/INSPIREHEP.DATA.26B4.TY5F>



Data are in HEPData directly linked to the paper in INSPIRE and have been cited:



Welcome to [INSPIRE](http://inspirehep.net), the High Energy Physics information system. Please direct questions, comments or corrections to feedback@inspirehep.net.

HEP :: HEPNAMES :: INSTITUTIONS :: CONFERENCES :: JOBS :: EXPERIMENTS :: JOURNALS :: HEPDATA



23

Blogged by 3
Tweeted by 6

[Click for more details](#)

Information Citations (7) Files

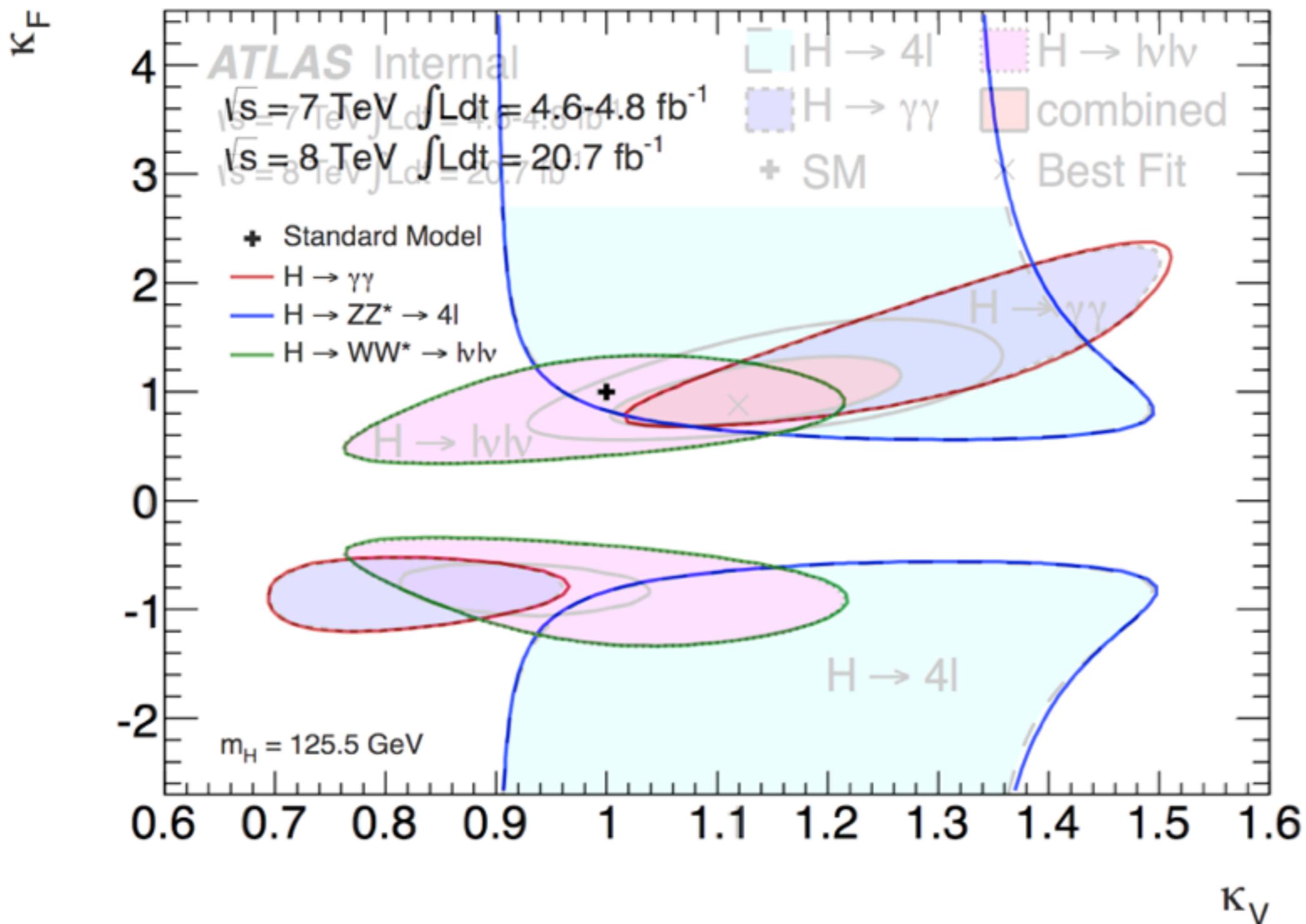
Data from Figure 7 from: Measurements of Higgs boson production and couplings in diboson final states with the ATLAS detector at the LHC

ATLAS Collaboration (Aad, Georges (Freiburg U.) [...]) [Show all 2923 authors](#)

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

LIKELIHOODS ON HEPDATA

Reproducing derived results from original paper!



COMMON USE-CASES

AAD 2014 — Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in $\sqrt{s} = 8$ TeV pp collisions with the ATLAS detector

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

Published in [JHEP 1404,169 \(2014\)](#) (DOI:[10.1007/JHEP04\(2014\)169](#))

Preprinted as [CERN-PH-EP-2014-019](#)

Archived as: [ARXIV:1402.7029](#)

Auxiliary Material: <http://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/PAPERS/SUSY-2013-12/>

Record in: [INSPIRE](#)

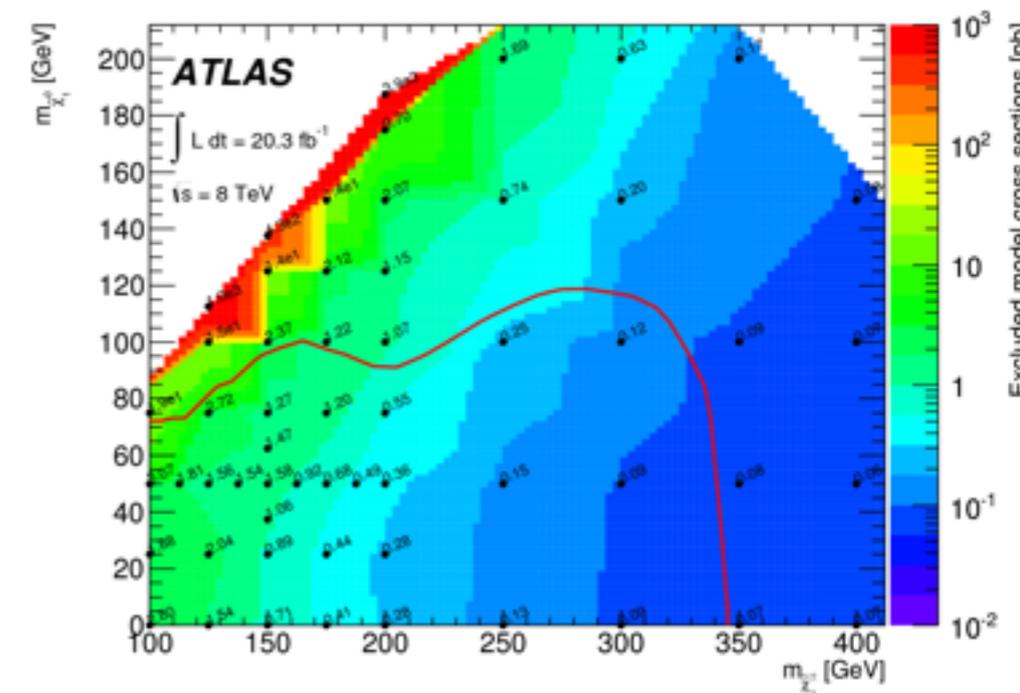
Record in: [CERN Document Server](#)

CERN-LHC. A search for the direct production of charginos and neutralinos in final states with three leptons and missing transverse momentum is presented. The analysis is based on 20.3 fb^{-1} of $\sqrt{s} = 8$ TeV proton-proton collisions delivered by the Large Hadron Collider and recorded in 2012 with the ATLAS detector. Observations are consistent with Standard Model expectations and limits are set in R-parity-conserving phenomenological Minimal Supersymmetric Models and in simplified supersymmetric models, significantly extending previous results. For simplified supersymmetric models of direct chargino (C1) and next-to-lightest neutralino (N2) production with decays to lightest neutralino, either all three generations of sleptons, staus only, gauge bosons, or Higgs bosons, C1 and N2 masses are excluded up to 700 GeV, 380 GeV, 345 GeV, or 148 GeV respectively, for a massless N1.

[Link to SLHA/ directory containing all .slha files](#)

[Link to SLHA.tar.gz file \(8 MB\) containing all .slha files](#)

Total number of tables: **67**. Displaying: 1 to 10. [First](#) | [Previous](#) | [Next](#) | [Last](#) | [All](#)



looking for excluded cross-sections,
would be nice if there was a quick
way to select this type of entry

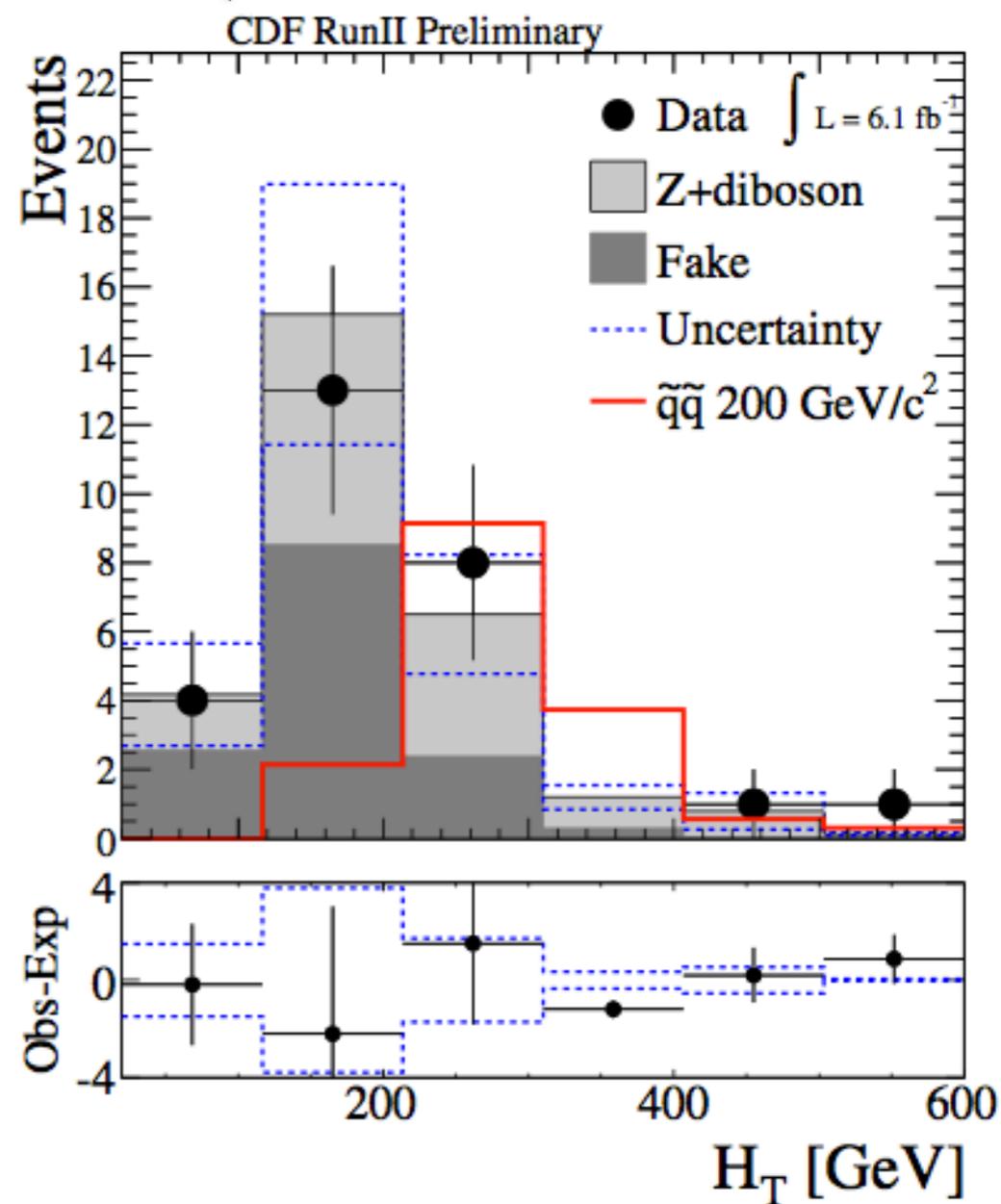
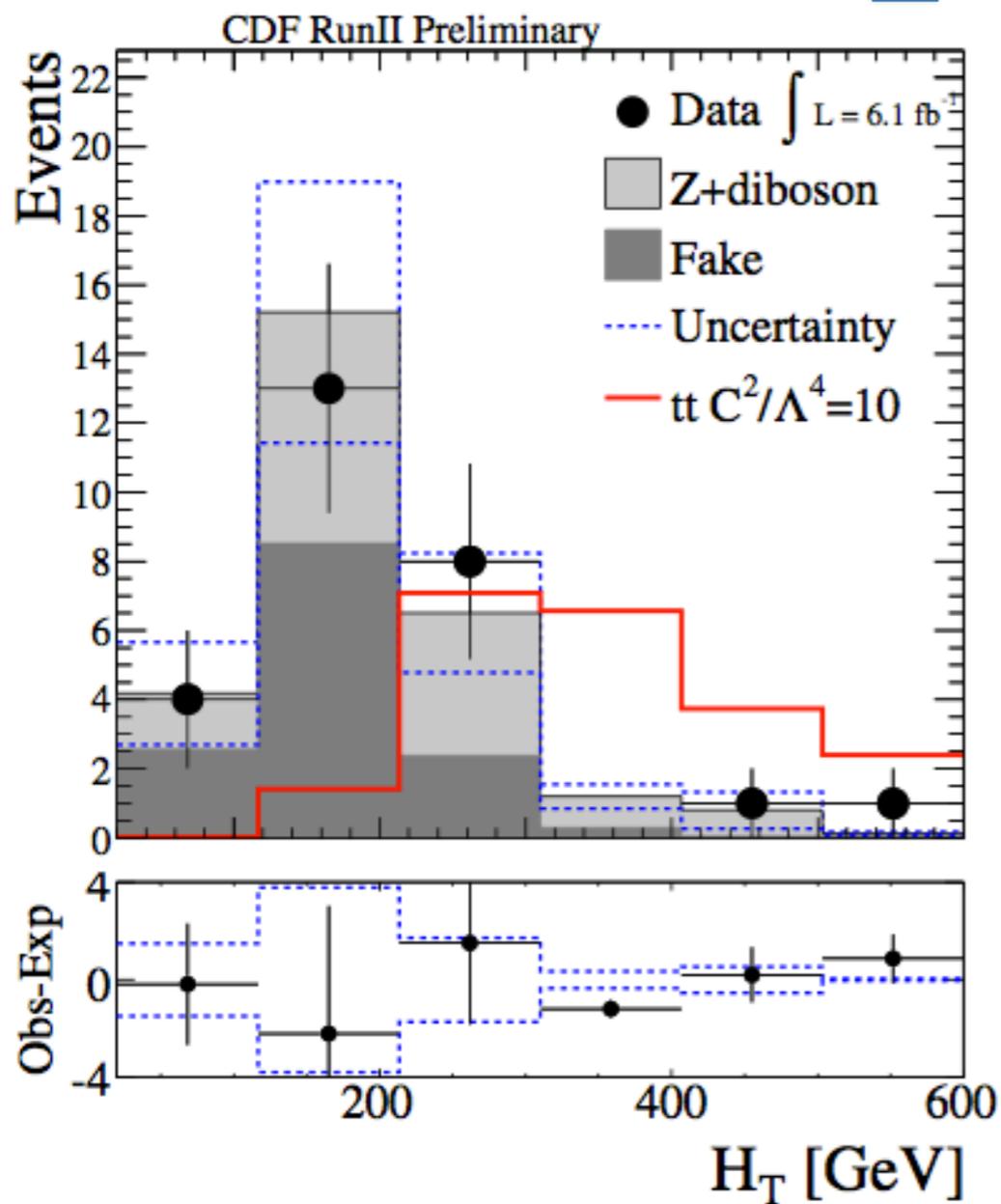
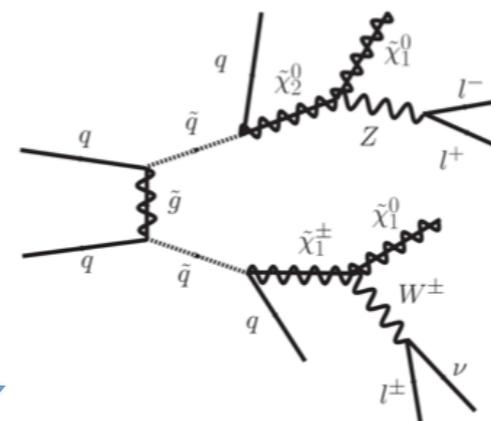
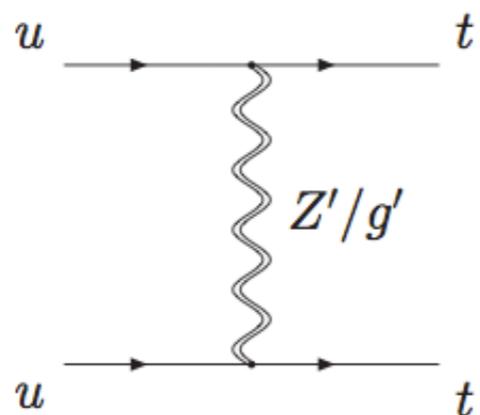


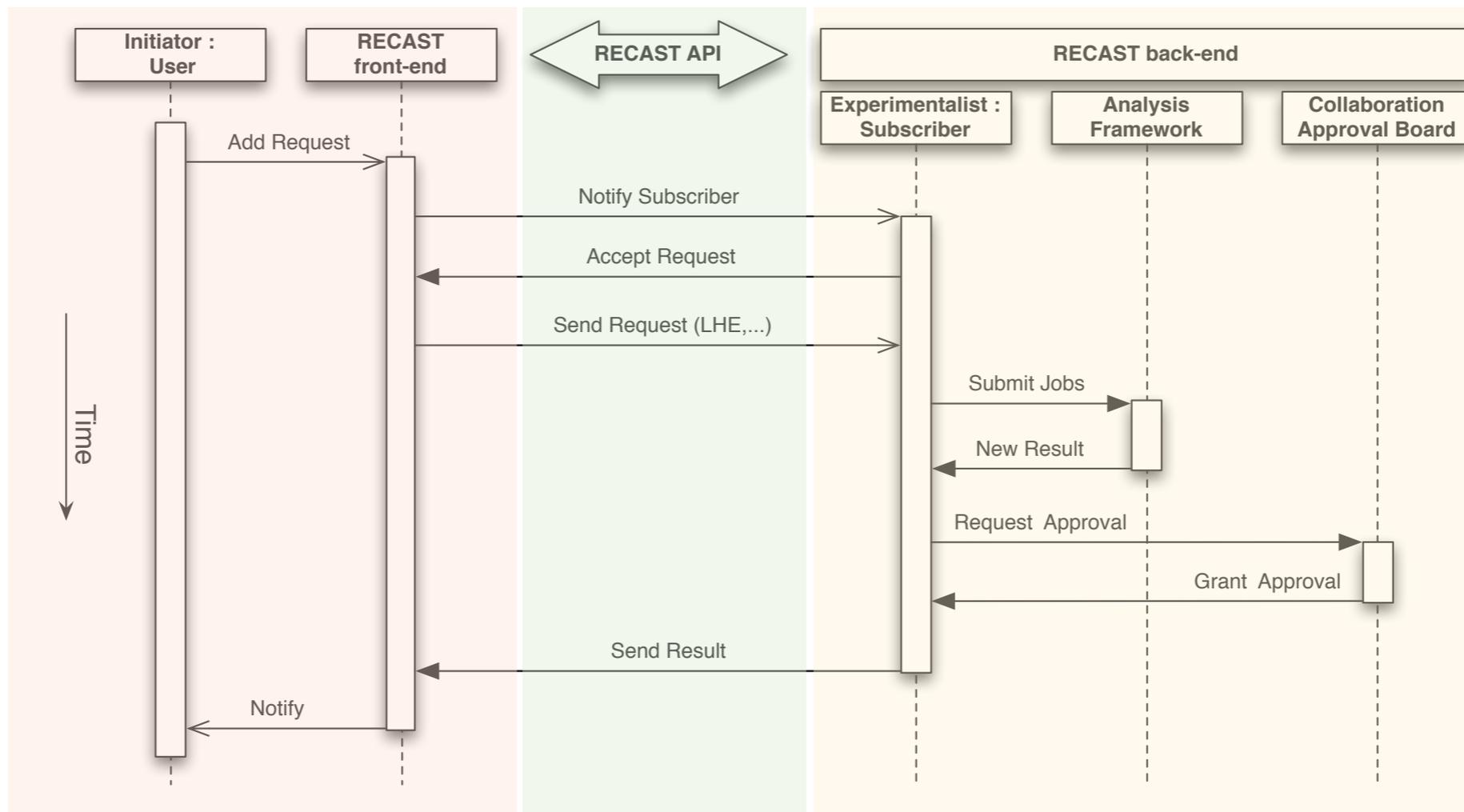
Level-1. Published results

All scientific output is published in journals, and preliminary results are made available in Conference Notes. All are openly available, without restriction on use by external parties beyond copyright law and the standard conditions agreed by CERN.

Data associated with journal publications are also made available: tables and data from plots (e.g. cross section values, likelihood profiles, selection efficiencies, cross section limits, ...) are stored in appropriate repositories such as [HEPDATA\[2\]](#). ATLAS also strives to make additional material related to the paper available that allows a reinterpretation of the data in the context of new theoretical models. For example, an extended encapsulation of the analysis is often provided for measurements in the framework of RIVET [3]. For searches information on signal acceptances is also made available to allow reinterpretation of these searches in the context of models developed by theorists after the publication. ATLAS is also exploring how to provide the capability for reinterpretation of searches in the future via a service such as RECAST [4]. RECAST allows theorists to evaluate the sensitivity of a published analysis to a new model they have developed by submitting their model to ATLAS.

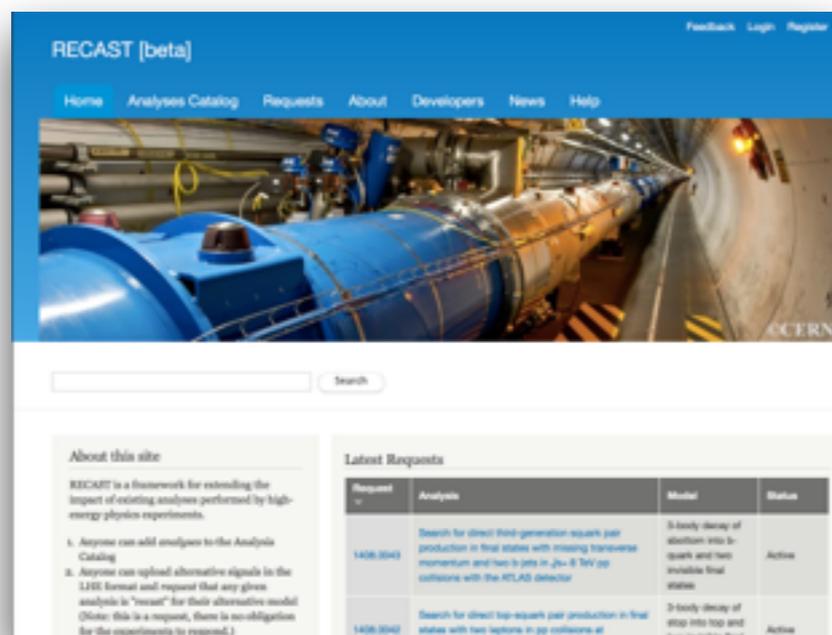
RECASTING



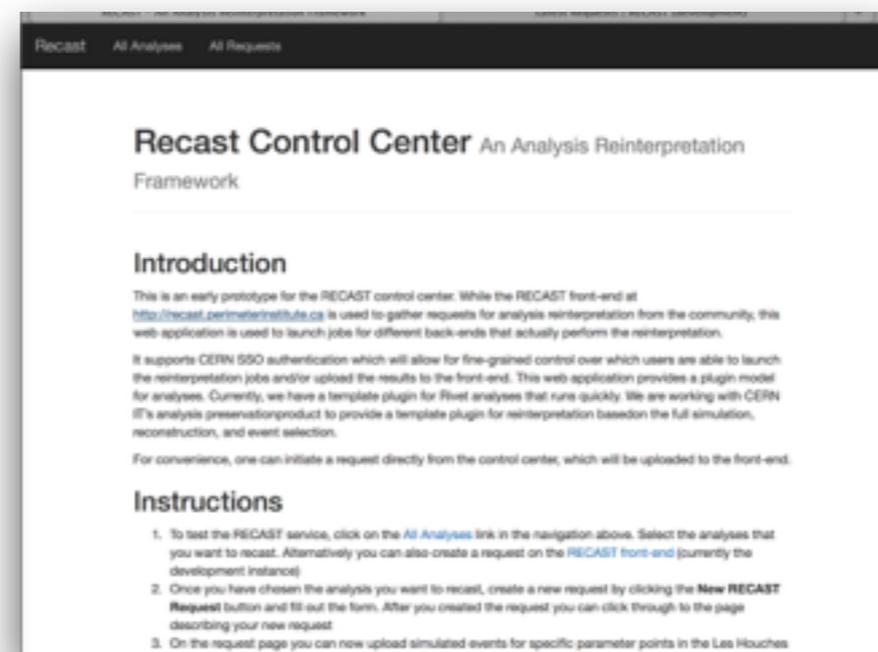


recast.perimeterinstitute.ca

recast-demo.cern.ch



Front-end prototype designed by K.C. and Itay Yavin, live since 2012.



New! Great work by Lukas Heinrich (NYU), contributions from Ken Bloom via DASPOS and Frank & Tibor of CERN-IT !

EXAMPLE RECAST → ZENODO

If experiments do adopt something like this, would be nice to have API connection to upload result.



The screenshot shows a Zenodo record page for a dataset titled "recast request response 3ee4bfde-739b-c844-99bc-f00b130e1ee3" by Lukas Heinrich, uploaded on 29 April 2015. The record is marked as "Dataset" and "Embargoed access". The embargo period ends on 01 January 2016, after which the files will be available as "Open Access". The DOI is 10.5072/zenodo.84, and the license is Creative Commons CCZero. The dataset is described as a "response to a RECAST request".

The preview section shows a plot titled "Cutflow" for a "Rivet" process. The y-axis is labeled 10^3 and the x-axis is labeled "Step". The plot shows a step-like function with the following x-axis labels: all, $n_\gamma = 2$ crack, η_{max} , $m_{\gamma\gamma}$, $P_{T,min}$, $P_{T,1}$, $P_{T,2}$, $P_{T,\gamma\gamma}$, and $E_{T,loss}$.

The right sidebar contains a "Share" section with social media icons and a "Cite as" section with the citation: Heinrich, Lukas. (2015). recast request response 3ee4bfde-739b-c844-99bc-f00b130e1ee3. Zenodo. 10.5072/zenodo.84. Below this is a "Select citation style..." dropdown menu. The "Export" section lists options: BibTeX, DataCite, DC, EndNote, NLM, RefWorks, MARC, and MARCXML.



FEEDBACK I'VE HEARD

excited about new developments

love idea of more native and higher fidelity upload (eg. HistFactory import).
Felt like combining backgrounds and uncertainties was very ambiguous.

Would like command line interface

like that code is on GitHub



A screenshot of a Facebook post and a comment. The post is from a user whose name is redacted with a blue bar. The post text says "A nice talk about the new HepData site." Below the text is a link preview for "Invenio User Group Workshop 2015 (12-15 October 2015): HepData". The preview includes a description of the workshop and the URL "INDICO.CERN.CH". Below the post are the "Like", "Comment", and "Share" buttons. A comment from another user, also with a redacted name, says "wow, looks really well executed! glad to see it will be on GH so people can actually send pull requests instead of just complain about the current state of affairs 😊". The comment has "Like" and "Reply" buttons and is dated "October 13 at 5:37pm".

October 13 at 10:39am · ✱

A nice talk about the new HepData site.

Invenio User Group Workshop 2015 (12-15 October 2015): HepData

The workshop is intended for Invenio administrators and will consist of a series of lectures, practical exercises, and discussions with Invenio developers. The goal is to enable better understanding of Invenio features and capabilities, to discuss specific needs, forthcoming features and development...

INDICO.CERN.CH

Like Comment Share

wow, looks really well executed! glad to see it will be on GH so people can actually send pull requests instead of just complain about the current state of affairs 😊

Like · Reply · October 13 at 5:37pm

COMMAND LINE INTERFACE

Just an example (figshare is a non-HEP data repository)

figshare command line client

pypi package 0.1.2 

This is a simple client for the figshare API in python. Currently very much a work-in-progress. The relatively annoying handling of the OAuth back and forth is implemented using requests-oauthlib. Currently the following actions are implemented:

- list_articles
- create_article
- upload_file
- delete_file

The API supports [quite a few more](#) actions which haven't been implemented yet. I'm happy to merge PRs!

Example

```
$ figshare list_articles
Met-enkephalin MD Trajectories
-----
article_id: 1026324
description: Ten ~50 ns molecular dynamics (MD) simulation
```