

# **HERAFitter Users Meeting**

16 Oct 2013

### **Conferences**:

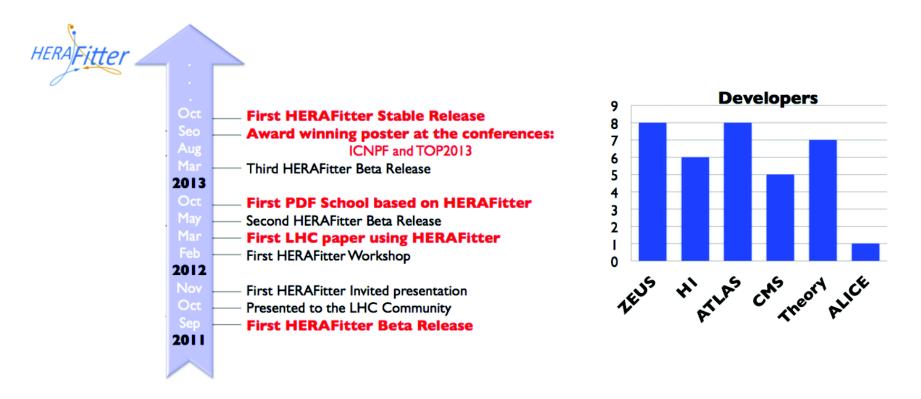
#### https://www.herafitter.org/HERAFitter/HERAFitter/HERAFitterTalks

Date	Conference/Workshop	Presenter	Link	Remarks
14-15.11.2013	OCD tools for LHC	R. Placakyte	talk on quark PDFs (LHC)	HERAFitter slides adverts
4-8.11.2013	• HADRON2013	V. Radescu	dedicated talk	beta3.1/stable release
15-20.09.2013	• ISMD	P. Starovoitov/K.Wichmann	dedicated poster	beta3.1 release
19-21.09.2013	ATLAS SM workshop	V. Radescu	poster: @pdf @pptx	beta3.1 release
€ 14-19.09.2013	● TOP2013	S. Camarda	dedicated poster	beta3.1 release
2-6.09.2013	● QCD@LHC	R. Sadykov	• dedicated talk	beta3.1 release
<b>28.08-5.09.2013</b>	• ICNFP	R. Placakyte	∅ poster.pdf	beta3.1 release
18.07.2013	● EPS2013	A. Sapronov	• dedicated talk	beta3.1 release
30.06.2013	Hadron Structure 2013	A. Gizhko	∅ talk.pdf	beta3.1 release
30.05.2013	● Low X	V. Radescu	• dedicated talk	beta3 release
22.05.2013	• Photon2013	K. Wichmann, V. Chekelian	talk on HERA physics	HERAFitter slides adverts
16.05.2013	• LHCP	H. Pirumov	• dedicated poster	First Poster
23.04.2013	• DIS	R. Placakyte	• dedicated talk	beta3 release
17.04.2013	• PDF4LHC	V. Radescu	dedicated talk	beta3 release

+ PRC DESY next week (24-25 October): talks in open and closed sessions



# **HERAFitter: News**



→ first stable release in couple of weeks: new functionality and a publication

#### **News:**

→ plan to enlarge HERAFitter developer team (Applgrid, NNPDF, LHCb)



## Status of the Stable Release

#### Code frozen (no new developments)

- → all missing pieces for stable release have been added
- → final tunning and clean up is ongoing
- → requires extensive testing (started)

#### HERAFitter-1.0.0 release: in few weeks

→ requires updates to documentation (README, manual, release notes)

Short paper planned together with the stable release (EPJC)

→ currently: first iteration with Steering Group



## Developments in the Stable Release

#### Added developments to the stable release:

- → restructuring of the code, improved naming for modules
- → updated comments, Doxygen
- → significantly improved drawing tools

→ Stefan's talk

- → calculation of theory errors in chi2 for PDFs (LHAPDF)
- → improvements in the parametrisation style (more generic naming)
- → generic tool for global minima solution

→ Stas talk

- → updated uPDF code (with evolution on the fly)
- → new user friendly interface to APPLGRIDs with math operations enabled
- → parallelising of the code with OpenMP (RT scheme)
- → more options for chi2 code available
- → tool to transform cov matrix to nuisance parameter representation
- → lead PDFs

### Several fixes implemented

RT LO enabled, fix of replicas in Reweighting code, fixes to the chi2 code



# Preparing for the Stable Release

### The feedback from Users is very welcome on:

### Technical aspects:

- → did you have problems to install HERAFitter (gcc version, root, Cern lib dependencies?)
  - → experience on different platforms (SL5/6, Ixlus, MAC, linux...)

#### **Documentation:**

- → improvements required for README, manual?
- → usage of Doxygen
- → more/different examples for fitting? drawing options?

More suggestions/comments for further (web page, meetings, ...) improvements?



# **Future Developments**

### <u>longer term:</u>

- → QED+QCD PDFs (generalised evolution in QCDNUM)
- → ttbar differential cross sections
- → Top++ (total top pair production)
- → ACOT NNLO
- → ACOT in QCDNUM
- → intrinsic charm
- → OpenMP (ACOT, ..)
- → APPLGRID interfaces to DYNNLO
- → LHAPDF in C++
- → fitting photon PDFs
- → different evolution codes, ...



#### Today's agenda:

Wednesday,	16 October 2013			
16:00 - 16:20	Status 20' Speakers: Voica Ana Maria Radescu (Deutsches Elektronen-Synchrotron (DE)), Ringaile Placakyte (Deutsches Elektronen-Synchrotron (DE))			
16:20 - 16:50	Report from Developers: 30'			
	Genetic tool for global minimisation 15' Speaker: Stanislav Shushkevich (Deutsches Elektronen-Synchrotron (DE))			
	Updates to drawing tools 15' Speaker: Stefano Camarda (Deutsches Elektronen-Synchrotron (DE))			
16:50 - 17:10	QED effects in NNPDF and the APFEL PDF evolution library 20'  Speakers: Juan Rojo Chacon (CERN), Stefano Carrazza (Università degli Studi e INFN Milano (IT)), Valerio Bertone (CERN)			
17:10 - 17:30	An update on lead PDFs 20'  Speakers: Dr. Aleksander Kusina (Southern Methodist University), Prof. Fred Olness (Southern Methodist University)			
17:30 - 17:50	Discusions with Users 20'			

## Next User's meeting in November

### Please fill doodle:

http://doodle.com/fwt9nqgfsiwk8x94