

Wei-Ming Yao (LBNL)

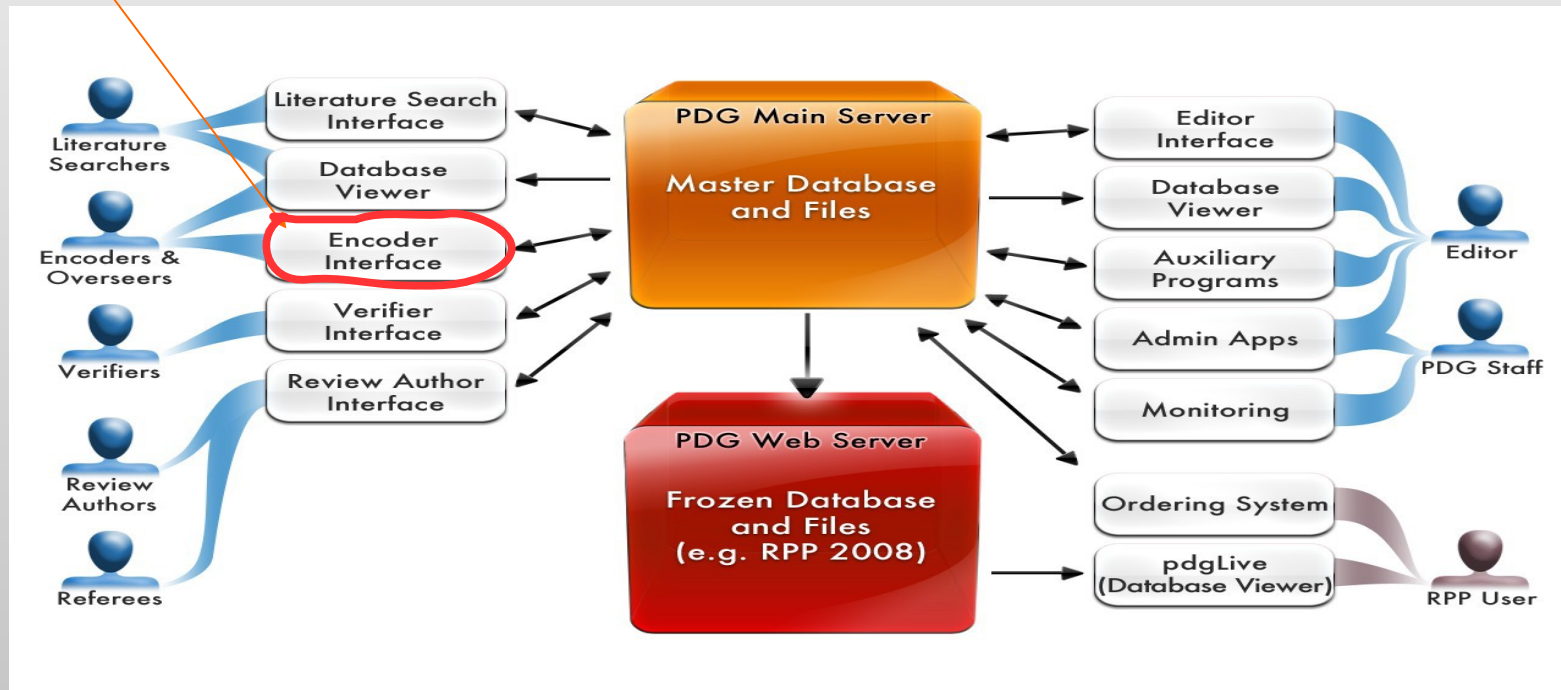
PDG Collaboration Meeting, Berkeley, November 6, 2014

- **Introduction**
- **PdgWorkspace**
- **Encoding Interface**
- **The priorities for improvements, etc**
- **Prospects for 2015 Edition**

Contact: Piotr Zyla and Wei-Ming Yao

Computing support: Sarah Poon

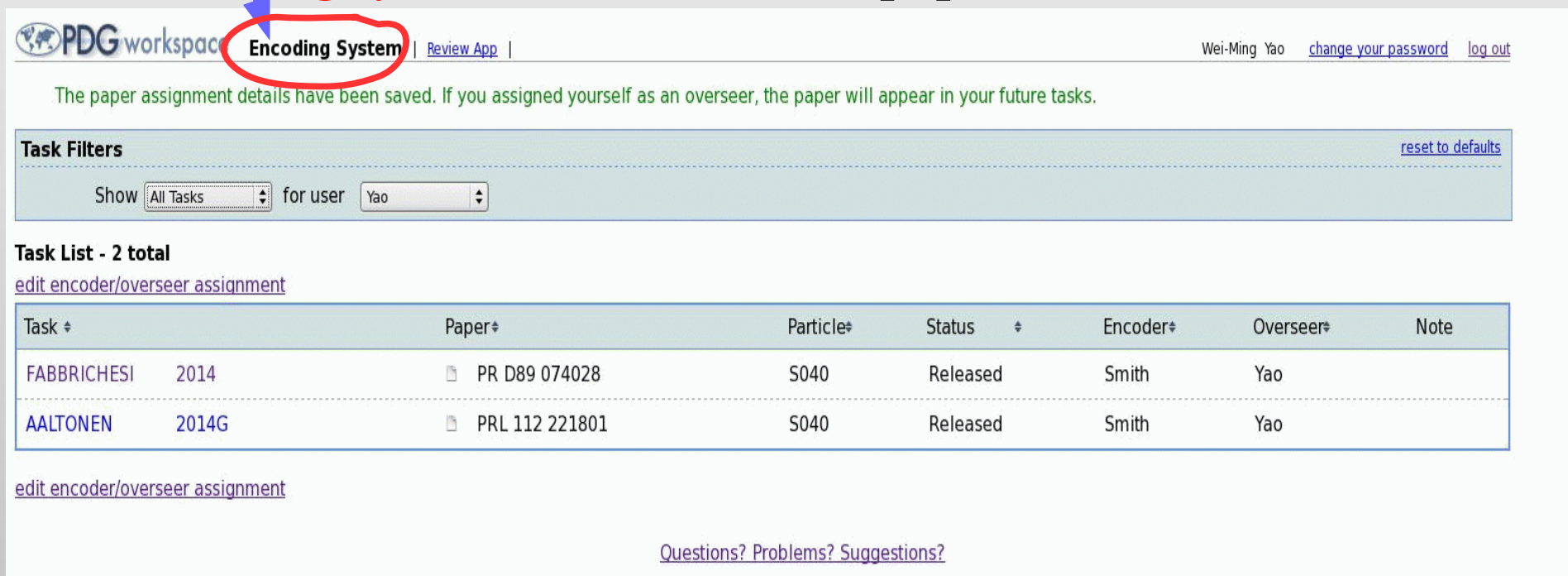
- Computing update completed in December 2011
- New encoding interface has been used successfully for RPP 2014.
 - Some parts are still not working friendly
 - Most searches and simple particles are handled nicely.



- Literature searcher first collect the published papers from journal and input them into DB using the literature search interface.
- Editor will assign the paper to each encoder when needed.
- The encoder will read the paper and encode the measurements.
- Details can be found at pdg.lbl.gov/rpp/encoders/contents.html
- **Old fashion way:**
 - The encoder would document the encoding in some text file that is sent to overseer for checking.
 - After correction, the overseer will send it to the editor for entering DB.
 - The overseer will check output from DB before sending out for verification.
- **New interfacing allows:**
 - The encoder reads the paper and enters measurements directly into DB.
 - Once the encoding is released by the encoder, the overseer will check the encoding in DB and make the corrections or add missing measurements.
 - The overseer will release the encoding to the editor for the final checking .

- Starting in 2012, collaboration gradually invited to start using the encoding interface.
- About half of encoders and overseers used new encoding system
- We have received large number of bug reports and suggestions for improvements, which is only way to commission system, **Thank you!**
 - Most searches and simple updating are ok.
 - B particle contain several hundred decay modes, making navigation difficult, but **if the node exists, that can be type in directly to start the encoding.**
 - Meson team has requested a special work flow for their encoding some time ago, but it turned out not flexible enough.
 - With limited support, resulting in large list of pending issues.
 - Hopefully, the situation will improve with a new hire next time

- Starting point for PDG collaborators, login in <https://pdgprod.lbl.gov/PdgWorkspace> and encoding instructions at pdgprod.lbl.gov/twiki/bin/view/Pdg/PdgEncodingInstructions
- Each person requires a login via their email address used by PDG
- **The encoding system** will show list of papers to be encoded.



PDG workspace | **Encoding System** | [Review App](#) | Wei-Ming Yao | [change your password](#) | [log out](#)

The paper assignment details have been saved. If you assigned yourself as an overseer, the paper will appear in your future tasks.

Task Filters [reset to defaults](#)

Show for user

Task List - 2 total
[edit encoder/overseer assignment](#)

Task	Paper	Particle	Status	Encoder	Overseer	Note
FABBRICHESI 2014	PR D89 074028	S040	Released	Smith	Yao	
AALTONEN 2014G	PRL 112 221801	S040	Released	Smith	Yao	

[edit encoder/overseer assignment](#)

[Questions? Problems? Suggestions?](#)

• Add reference...

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AALTONEN 2014G (PRL 112 221801)

reference details | add measurements | toolbox | review & sign off | [return to task list](#)

Reference details saved.

Author(s): et al.

Verifier:

Collaboration(s):

Note:

Assigned Particles

Particle Code	Particle Name	Finder	
Q007	t	CW,SE	has contents
S040	A_b^0	Yao	<input type="button" value="Mark as Empty"/>

[assign another particle to this reference](#)

[Questions? Problems? Suggestions?](#)

• Add measurement...

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AALTONEN 2014G (PRL 112 221801)

reference details | **add measurements** | toolbox | review & sign off | [return to task list](#)

Add New Measurement

* Node Document ID * Used? Value () EVTS CL% TECN Charge Comment

Footnote:

Data Block Browser

Node	Value ()	CL%	Document ID	TECN	Comment	occ	Actions
S040R15	$\Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e) / \Gamma_{total}$						
S040R04	$\Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e) / \Gamma(A_b^0 \rightarrow A_c^+ \pi^-)$						
S040R16	$\Gamma(A_b^0 \rightarrow A_c^+ \pi^+ \pi^- e^- \bar{\nu}_e) / \Gamma_{total}$						
S040K1/	$\Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e) / \Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e) + \Gamma(A_b^0 \rightarrow A_c^+ \pi^+ \pi^- e^- \bar{\nu}_e)$						
S040R01	$\Gamma(A_b^0 \rightarrow A_c(2695)^+ e^- \bar{\nu}_e) / \Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e)$						
S040R02	$\Gamma(A_b^0 \rightarrow A_c(2625)^+ e^- \bar{\nu}_e) / \Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e)$						
S040R03	$\Gamma(A_b^0 \rightarrow \Sigma_c(2455)^0 \pi^+ e^- \bar{\nu}_e) / \Gamma(A_b^0 \rightarrow \Sigma_c(2455)^+ \pi^- e^- \bar{\nu}_e) + \Gamma(A_b^0 \rightarrow \Sigma_c(2455)^+ \pi^- e^- \bar{\nu}_e) / \Gamma(A_b^0 \rightarrow A_c^+ e^- \bar{\nu}_e)$						
S040R18	$\Gamma(A_b^0 \rightarrow p h^-) / \Gamma_{total}$						edit delete
S040K9	$\Gamma(A_b^0 \rightarrow p \pi^-) / \Gamma_{total}$						
S040R10	$\Gamma(A_b^0 \rightarrow p K^-) / \Gamma_{total}$						
S040R20	$\Gamma(A_b^0 \rightarrow p \pi^-) / \Gamma(A_b^0 \rightarrow p K^-)$						

Datablock for Node **S040R18**

Value ()	CL%	Document ID	TECN	Comment	occ	
$<2.3 \times 10^{-5}$						
$<2.3 \times 10^{-5}$	90	ACOSTA ¹	20050	CDF	at 1.96 TeV	1

*** We do not use the following data for averages, fits, limits, etc ***

¹ Assumes #i{f}#sub{#p{Lambda}} / #i{f}#sub{d} = 0.25, and equal momentum distribution for #p{Lambda}_b and #p{B} mesons.

• Use tool box to define new decay mode and Branching Ratio...

PDGworkspace Encoding System | Review App | Wei-Ming Yao | [change your password](#) | [log out](#)

AAJ 2014AA (PRL 112 202001)

reference details | **measurements** | toolbox | review & sign off | [return to task list](#)

decay mode | branching ratio

Particle Selector: S040

decay modes for S040

- 1:
- 2: $\Lambda_b^0 \rightarrow p D^0 \pi^-$
- 3: $\Lambda_b^0 \rightarrow p D^0 K^-$
- 4: $\Lambda_b^0 \rightarrow \Lambda_c \pi^-$
- 5: $\Lambda_b^0 \rightarrow \Lambda_c K^-$
- 6: $\Lambda_b^0 \rightarrow \Lambda_c a_1(1260)$
- 7: $\Lambda_b^0 \rightarrow \Lambda_c \pi^+ \pi^- \pi^-$
- 8:
- 9:
- 10:
- 11:
- 12: $\Lambda_b^0 \rightarrow \Lambda K^0 2\pi^+ 2\pi^-$
- 13: $\Lambda_b^0 \rightarrow \Lambda_c \bar{c} \bar{\nu}_l \text{ anything}$

Add New Decay Mode for Λ_b^0 (S040)

Drag particles from the right to add to the form below

$\Lambda_b^0 \rightarrow$

Λ_c^+

D^-

[preview decay](#)

create new decay

particle selector

$\Lambda_b^0(2090)$ $\Lambda_b^0(2090)$ $\Lambda_b^0(2090)$ $\Lambda_b^0(2090)$

$K_2^*(2250)$ $K_2^*(2250)^-$ $K_2^*(2250)^{\mp}$ $K_2^*(2250)^+$

$K_3^*(2320)$ $K_3^*(2320)^-$ $K_3^*(2320)^{\mp}$ $K_3^*(2320)^+$

$K_4^*(2380)$

$K_4^*(2500)$ $K_4^*(2500)^-$ $K_4^*(2500)^{\mp}$ $K_4^*(2500)^+$

$K_{J^*}(3100)$

D^- D^0 D^{\mp} D^{\pm} D^+ $D^{\bar{}}$ $D^{\bar{}}$

D^0 D^0 D^0 D^0 D^0

$D^{(*)}$ D^{*0} $D^*(2007)$ $D^*(2007)^-$ $D^*(2007)^{\mp}$

D^* D^* D^{*-} D^{*+} $D^*(2010)$ $D^*(2010)$

[Questions? Problems? Suggestions?](#)

PDGworkspace Encoding System | Review App | Wei-Ming Yao | [change your password](#) | [log out](#)

FABRICHESI 2014 (PR D89 074028)

reference details | **add measurement** | toolbox | review & sign off | [return to task list](#)

decay mode | **branching ratio**

Particle Selector: S040

branching ratios for S040

- 1: $\Gamma(\Lambda_b^0 \rightarrow J/\psi(1S) A \times B) / \Gamma_{\text{total}}$
- 2: $\Gamma(\Lambda_b^0 \rightarrow p D^0 \pi^-) / \Gamma_{\text{total}}$
- 3: $\Gamma(\Lambda_b^0 \rightarrow p D^0 K^-) / \Gamma(\Lambda_b^0 \rightarrow p D^0 \pi^-)$
- 4: $\Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-) / \Gamma_{\text{total}}$
- 5: $\Gamma(\Lambda_b^0 \rightarrow p D^0 \pi^-) / \Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-)$
- 6: $\Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ K^-) / \Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-)$
- 7: $\Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ a_1(1260)^-) / \Gamma_{\text{total}}$
- 8: $\Gamma(\Lambda(b)^0 \rightarrow \Lambda_c^+ D^-) / \Gamma_{\text{total}}$
- 9: $\Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^+ \pi^- \pi^-) / \Gamma_{\text{total}}$
- 10: $\Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^+ \pi^- \pi^-) / \Gamma(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^+ \pi^- \pi^-)$
- 11: $\Gamma(\Lambda_b^0 \rightarrow \Lambda_c(2595)^+ \pi^- \Lambda_c(2595)^0)$

Add New Branching Ratio for Lambda(b)(0) (S040)

Select Equation Type: **Γ / total** Example: $(K^+ \pi^-)$

Drag decays from the right to add to the form below

Γ

1

$\Lambda(b)^0 \rightarrow \Lambda_c D^-$

add

decay mode selector

- 1:
- 2: $\Lambda_b^0 \rightarrow p D^0 \pi^-$
- 3: $\Lambda_b^0 \rightarrow p D^0 K^-$
- 4: $\Lambda_b^0 \rightarrow \Lambda_c \pi^-$
- 5: $\Lambda_b^0 \rightarrow \Lambda_c K^-$
- 6: $\Lambda_b^0 \rightarrow \Lambda_c a_1(1260)$
- 7: $\Lambda(b)^0 \rightarrow \Lambda_c D^-$
- 8: $\Lambda(b)^0 \rightarrow \{\{\text{Lambda}(\Lambda_c)\}\}_{c^+}$
- 9: $\Lambda_b^0 \rightarrow \Lambda_c \pi^+ \pi^- \pi^-$
- 10:
- 11:
- 12:

[Questions? Problems? Suggestions?](#)

- **Fix issues with multi-particle assignment in literature search interface.**
- **Fix to allow Meson team's work flow to work**
 - **Allow immediate access to encodings.**
 - **Implicit assignments of encoder and overseer.**
- **Fixing detailed logging and sign off**
 - **Allow to add new paper with assigned responsibilities**
 - **Allow to sign off for both encoder and overseer for specific cases.**
 - **Improve the layout for “sign off” tasks.**
- **Improving the navigation of B particle with many decay modes.**
 - **Have an ability to search for specific node name**
- **Add an ability for note exchanging between encoder/overseer.**
- ...

- **New encoding system has been used successfully in RPP 2014.**
- **About half of encoders and overseers have used the new system.**
- **We have received large number of bug reports and suggestions for improvements, which is the way to commission the system.**
- **With improved computing support in the future, we will have a fast turn around to make the system more friendly.**
- **The priorities are set and Sarah is fixing some urgent problems.**
- **We encourage every encoder to try out the new system early.**
- **Once familiar with the system, the encoding efficiency will improve.**
- **The success of PDG depends on it !**