

$$\underline{\phi_3/\gamma}$$

BaBar : Fernando Martinez-Vidal

Belle : Karim Trabelsi

2nd Workshop on the 'Physics of the B-factories' Book

γ section contents

- Many papers related to γ (variety of methods and channels)
- Overview on approaches to measure γ
- Focus on GLW, ADS and Dalitz methods on $B^+ \rightarrow D^{(*)}K^{(*)+}$ decays
 - GLW $B^- \rightarrow D^0K^-$, $B^- \rightarrow D^{*0}K^-$, $B^- \rightarrow D^0K^{*-}$
 - ADS $B^- \rightarrow D^0K^-$, $B^- \rightarrow D^{*0}K^-$, $B^- \rightarrow D^0K^{*-}$
 - Dalitz/GGSZ $B^- \rightarrow D^0K^-$, $B^- \rightarrow D^{*0}K^-$, $B^- \rightarrow D^0K^{*-}$
- $B^0 \rightarrow D^0K^{*0}$ modes (ADS, Dalitz) do not bring much information at B factories
 - Will include but short
- $\sin(2\beta+\gamma)$ measurements (full and partial reco) will be included
 - Shorter than subsections for GLW+ADS+Dalitz with charged modes
- Too early yet to consider "Model Independent" Dalitz measurement
 - Belle is working on it, BaBar did not consider it (so far)

Approximate expected # pages
needed for whole section: ~ 25

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BaBar Papers

Charged Modes

- GLW $B^- \rightarrow D^{(*)}K^{*-}$
 - PRD77,111102 (2008) [382M], DK
 - PRD78,092002 (2008) [382M], D^*K
 - CKM2008 preliminary, DK^*
 - To be published with full stat
- ADS $B^- \rightarrow D^{(*)}K^{*-}$
 - PRD72, 032004 (2005) [232M], $D^{(*)}K$
 - CKM2008 preliminary, DK^*
 - To be updated with full stat
 - PRD76, 11101 (2007), $D \rightarrow K\pi\pi^0$
- Dalitz $B^- \rightarrow D^{(*)}K^{*-}$
 - PRD78, 034023 (2008) [383M]
 - To be updated with full stat
 - PRL99, 251801 (2007) [324M], $D \rightarrow \pi\pi\pi^0$

Neutral modes

- ADS $B^0 \rightarrow DK^*0$
 - arXiv:0904.2112 [465M]
- Dalitz $B^0 \rightarrow DK^*0$
 - arXiv:0805.2001 [371M]

$\sin(2\beta+\gamma)$

- $B^0 \rightarrow D^{(*)}\pi$ full reconstruction
 - PRD73, 111101 (2006) [232M]
 - To be updated with full stat
- $B^0 \rightarrow D^{(*)}\pi$ partial reconstruction
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Measurement of r for $D^{(*)}h$

- $B^0 \rightarrow D_s^{(*)}+h^-$
 - PRD78, 032005 (2008) [381M]

Final analyses expected by 2010

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$\text{Sin}(2\beta+\gamma)$

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- ADS $B^- \rightarrow D^{(*)}K^{*-}$
 - PRD78, 071901 (2008) [657M]
 - To be completed with D^*K/DK^* and full stat
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 - PRD73, 112009 (2006) [386M]
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$\sin(2\beta+\gamma)$

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- $B^0 \rightarrow D^{(*)}\pi$ partial reconstruction
 - arXiv:0809.3203 [657M]
 - To be published

Measurement of r for $D^{(*)}h$

- $B^+ \rightarrow D^* + \pi^0$
 - PRL 101, 041601 (2008) [657M]
- $B^0 \rightarrow Ds^{*+}h^-$
 - PRL 89, 231804 (2002) [85M]. To be updated with full stat
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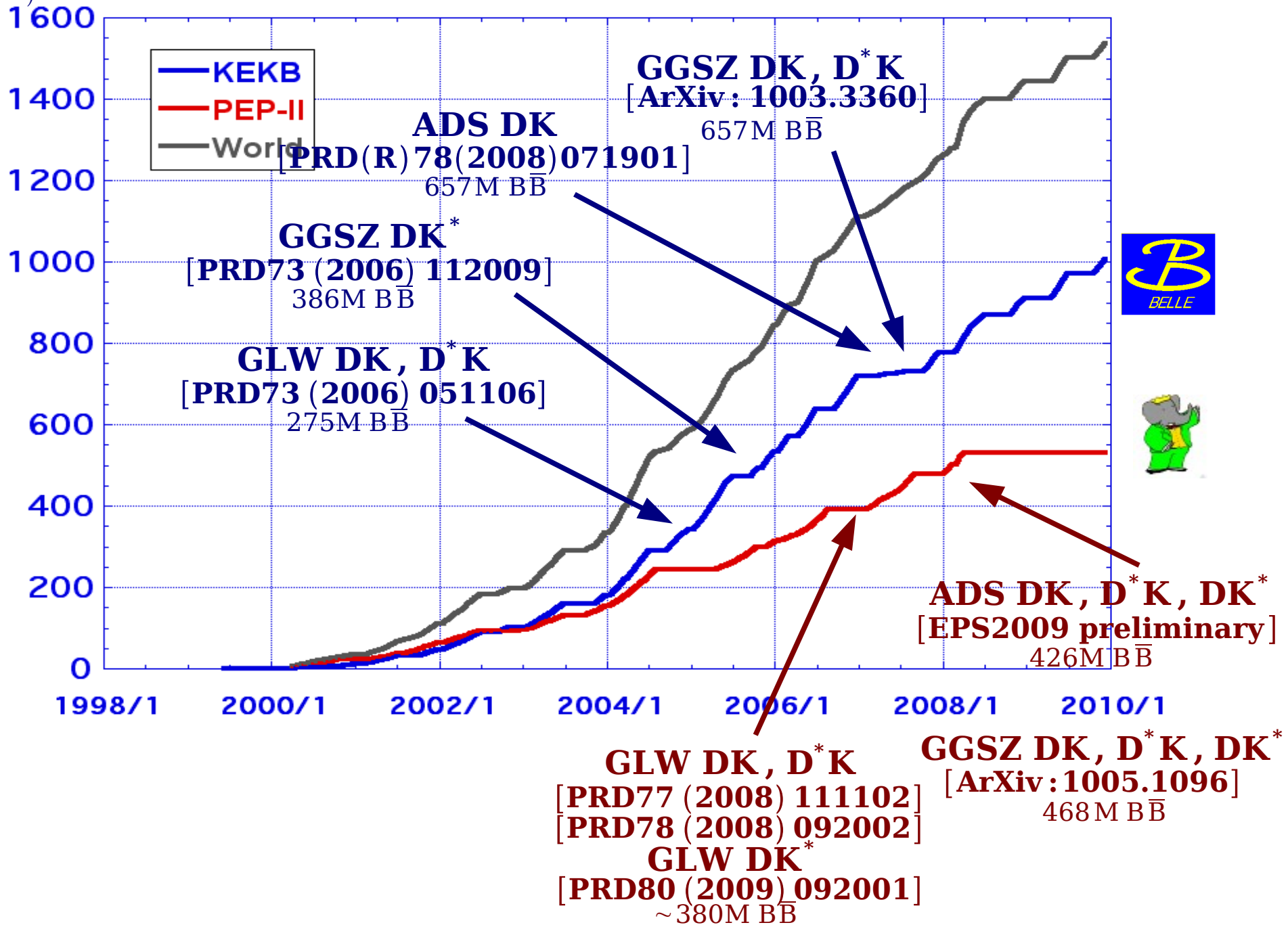
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measurements related to ϕ_3/γ

Lum(fb^{-1})



Inter-correlation

- Physics sections that contain Dalitz analysis results:
 - Hadronic B decays to charm (for r estimation for $B \rightarrow D_s^{(*)} h, D^* \pi^0$)
 - **D mixing and CPV** (for $D^0 \rightarrow K_s h h$ Dalitz models)
 - Global CKM fits
- Relies on the following Tools sections:
 - Dalitz plot analyses
 - Maximum likelihood fits
 - Tagging and Vertexing (for exclusive and inclusive B reconstruction)
 - Multivariate discriminants, Blind analysis

inputs from charm
(other than B-factories)
 δ_D for example

Potential contributors

Preparing a list of candidates and contacting them.

Potential contributors (some even not contacted yet)

BaBar: Abi Soffer, [redacted]

Belle: Anton Poluektov, Masaya Iwabuchi, Yoshiyuki Onuki, Jim Libby

confirmed contributors

A. Poluektov (GGSZ)

G. Mohanty ($D^{(*)} \pi$)

from B. Yabsley, this morning (also mentioned by Bostjan as an easy example)

1. fully combined presentation

e.g. γ/ϕ_3 Dalitz analyses; \exists strong consensus throughout

good relation with HFAG (UT)