
Update on the Mixing and Time-Dependent CPV Chapter

Adrian Bevan





To Do List from Annecy

- Draft of chapter available for a while
 - 7 Mixing and time-dependent analyses 1
 - 7.1 Neutral meson mixing 1
 - 7.2 Time-dependent evolution 2
 - 7.3 Use of flavour tagging 3
 - 7.4 Resolution on Δt 5
 - 7.5 Parameter extraction from data 6
- To-do list:
 - Discuss with Vertexing Chapter folks about the split on Δt resolution.
 - Cross reference the tagging performance reported in Chapter 5.3 (tagging) against the discussion of BFlav parameter extraction [Re: section 7.5].
 - Add a brief mention about the effect of a data driven $\Delta\Gamma$ constraint on a TDCPV measurement (1 or 2 sentences to reference recent paper by AB, G. Inguglia and B. Meadows: arXiv:1106.5075).
 - Recent set of comments posted on the HN to address.



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7	Mixing and time-dependent analyses	1
7.1	Neutral meson mixing	1
7.2	Time-dependent evolution	2
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7.4	Resolution on Δt	5
7.5	Parameter extraction from data	6

- To-do list:

- Discuss with Vertexing Chapter folks about the split on Δt resolution.
- Cross refer **Point 1:** ed in Chapter 5.3 (tagging We've iterated a couple of times on this, and parameter extraction in the end Wouter decided to write about the resolution function in some minimal way given $\Delta\Gamma$ and refer to the existing discussion in this tences to reference chapter. Meadows: arXiv:1106.5075).
- Recent set of comments posted on the HN to address.



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7	Mixing and time-dependent analyses	1
7.1	Neutral meson mixing	1
7.2	Time-dependent evolution	2
7.3	3
7.4	Cross referencing done. Aim to re-read both	5
7.5	this and the tagging chapter in the coming week to finesse the overlap between the two.	6

- To-do list:

- Discuss w resolution
- Cross refer 5.3 (tagging extraction)
- Add a brief constraint reference arXiv:1106

Point 2:
 Cross referencing done. Aim to re-read both this and the tagging chapter in the coming week to finesse the overlap between the two.

Note: notation changed:

$$\omega \rightarrow \omega_{B^0}$$

$$\bar{\omega} \rightarrow \omega_{\bar{B}^0}$$

This chapter is now consistent with the flavor tagging one.

- Recent set of comments posted on the HN to address.

split on Δt
 ed in Chapter
 meter
 riven $\Delta\Gamma$
 tences to
 Meadows:



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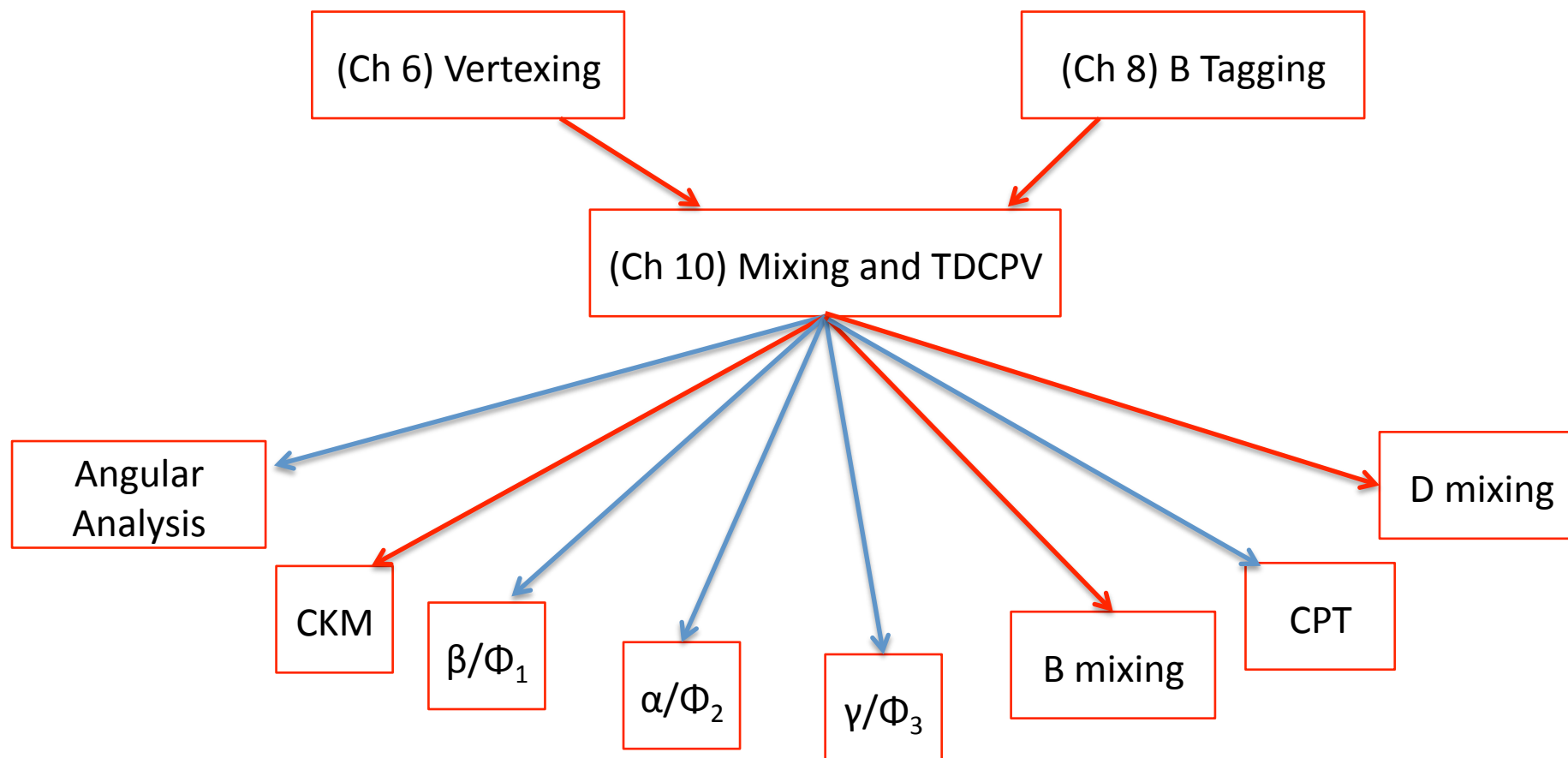
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- To-do list:

- Discuss with Vertexing Chapter folks about the split on Δt resolution.
- Cross refer **Point 3:** ed in Chapter
5.3 (tagging Added a reference to arXiv:1106.5075 (now parameter
extraction accepted for publication in PRD)
- Add a brief **Point 4:** riven $\Delta\Gamma$
constraint Responded to Soeren's comments. tences to
reference Meadows:
arXiv:1106.5075).
- Recent set of comments posted on the HN to address.

Relationships to other chapters/sections



Red: indicates lots of feedback between these sections.

Blue indicates little feedback between these sections

Can editors of other sections confirm that this chapter has what they expect/need and send me comments!



Outstanding issues

- A few references to add: Re and Im contributions to mixing and how these relate to Δm and $\Delta \Gamma$.
 - Asked Thomas to think about suitable references to add when he comments.
- Angles chapters have been asked about the level of tag-side interference discussion given here.
 - One viewpoint: Nice to have the tag-side interference discussion in one place.
 - Another viewpoint: Specifics of how these things are dealt with are a little detailed.
 - Is there a strong opinion from people one way or the other? If there is no strong consensus then the text will probably stay where it is.
- Additional comments welcome!