Measuring γ in $B^{\pm} \to (K^+K^-\pi^+\pi^-)_D K^{\pm}$ decays

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Outline

Background

- 4-year MPhys in Oxford
  - Performance of monolithic CMOS sensors
  - Prof Daniela Bortoletto
- CERN Summer Student 2019
  - Beam loss reduction in TT20 transfer line
  - Dr Yann Dutheil, Dr Matthew Fraser
- Oxford Summer Student 2018
  - Study of PDF uncertainties in W-boson mass measurement
  - Prof Chris Hays
- RAL Summer Student 2018
  - Bending magnets in accelerator simulations (Dr Chris Rogers)

The chemistry packages

We focus on two LaTeX chemistry packages:

The `chemfig` package

This package provides the command which draws molecules. Created by Christian Tellechea, a detailed user guide can be found here:

`www.tex.ac.uk/ctan/macros/generic/chemfig/chemfig_doc_en.pdf`

The `mhchem` package

The `mhchem` package provides simple commands for typesetting chemical molecular formulae and equations. Created by Martin Hensel, a detailed user guide can be found here:

`http://mirror.ox.ac.uk/sites/ctan.org/macros/latex/contrib/`
`mhchem/mhchem.pdf`

Chemical equations with `mhchem`

- The `mhchem` package lets you write chemical equations in LaTeX with the minimum of effort.
- The example below shows how the standard representation of a reaction (on the left) is created from the simple code on the right:

  $CO_2 + C \longrightarrow 2\,CO$ is created with `\ce{CO2 + C -> 2CO}`

- More complicated reactions are still easy to write:

$$SO_4{}^{2-} + Ba^{2+} \longrightarrow BaSO_4 \downarrow$$
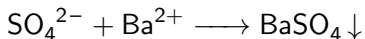
is created with

`\ce{SO4^2- + Ba^2+ -> BaSO4 v}`

Where to go next. . .

- This short example was designed to introduce you to using Overleaf for scientific presentations.
- This is made possible by the many great packages that have been developed for LaTeX, including the two we focused on here (plus the `Beamer` package used for the overall presentation style).
- For more help on using LaTeX, see the links on the Overleaf help page: `www.overleaf.com/help` or check out our free introductory course: `www.overleaf.com/blog/7`.

  Follow @overleaf on Twitter for all the latest news and updates.

  Happy LaTeXing!