Past experience

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Outline

1. Initial interest in HEP
2. PhD.: Flavour tagging in LHCb
3. CERN fellowship
4. Current responsibilities
5. Conclusion

Part I

Initial interest

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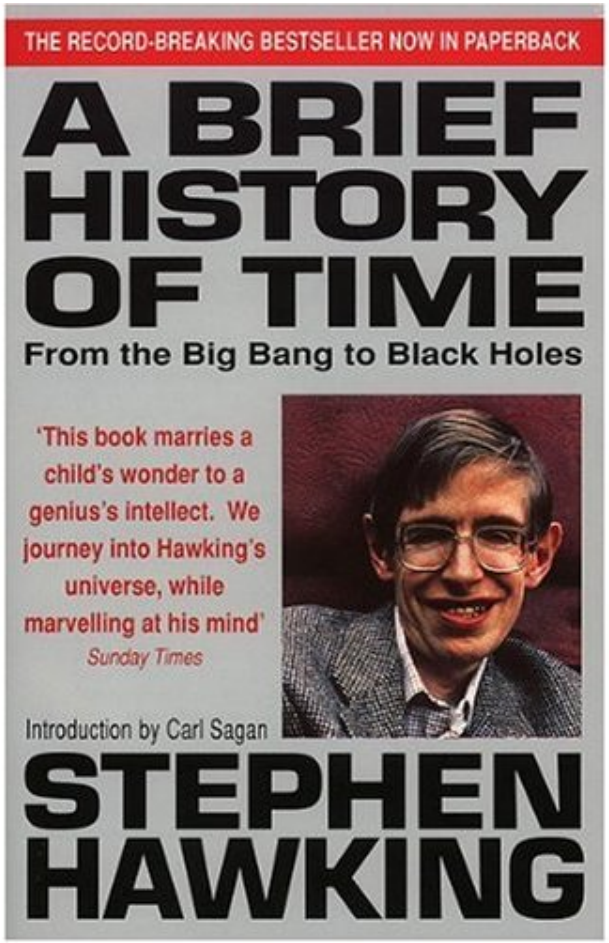
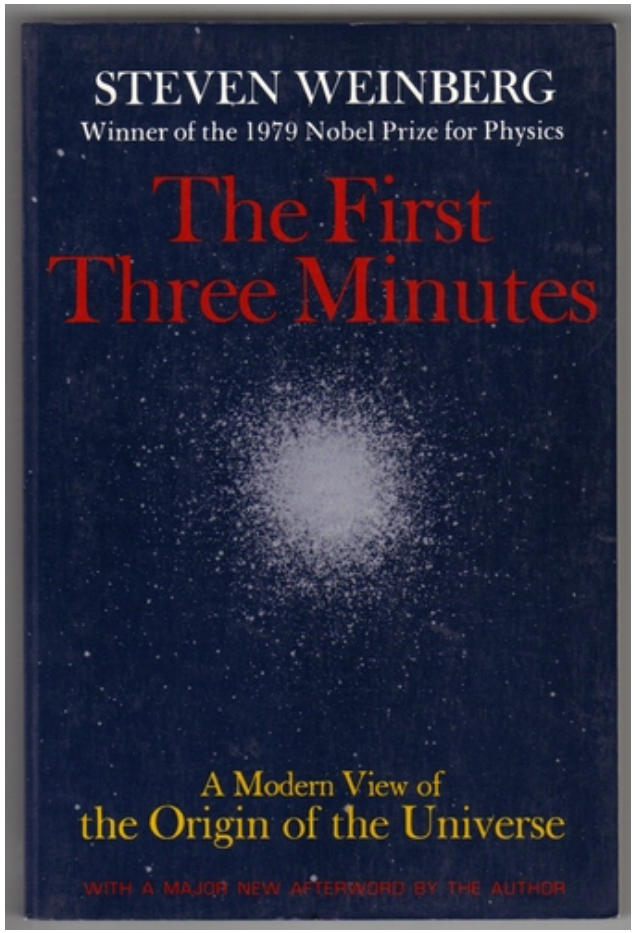
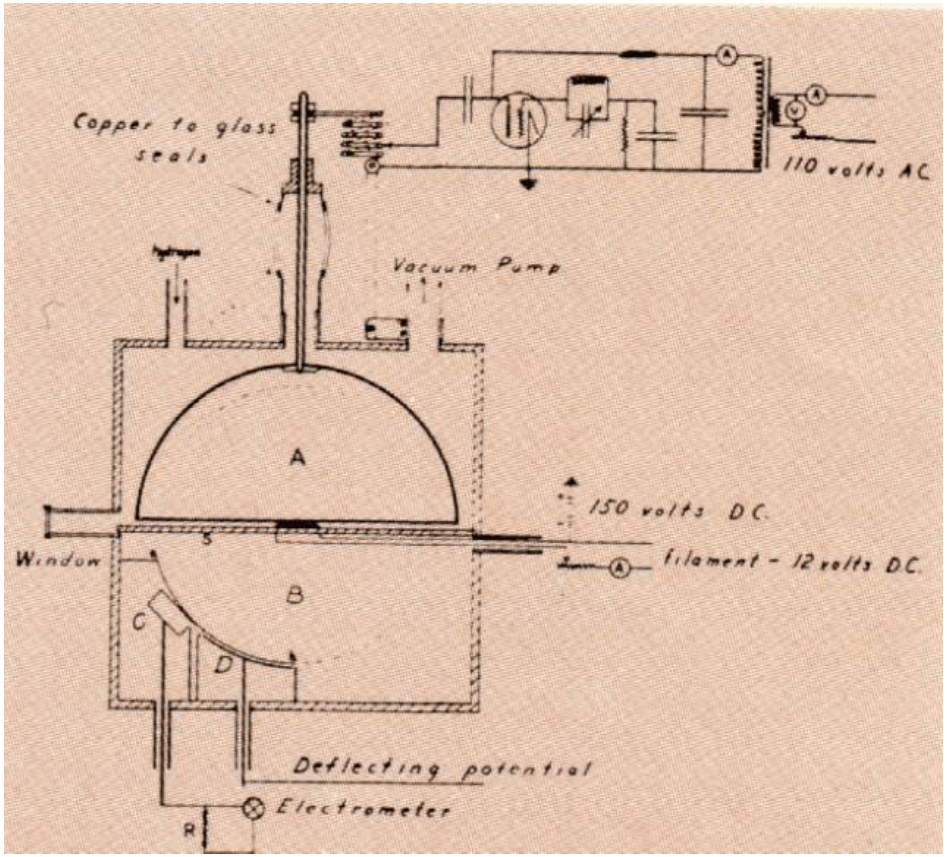
First interest in HEP: at 15 years old, after reading





Initial interest (Cont'd)

Amazed by the cyclotron studied in school:



Wanted to work on accelerator physics, and make new discoveries. . .

Decided to study high energy physics!

Initial interest (Cont'd)

University curriculum:

- First 2 years in Aix-en-Provence,
- Then had to move to Marseille for the rest: Université de la Méditerrannée
- Discovered CPPM during first trip to University

- Knew I would do my PhD. thesis there
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Part II

PhD.: Flavour tagging in LHCb

PhD.: the origins

- Started studying flavour tagging between Licence and Master, with O. Leroy in the LHCb group at CPPM.
- Internship at CERN in summer 2005: Flavour tagging in Panoramix
- Master's internship with O. Leroy: Study of secondary vertex reconstruction for flavour fagging in LHCb
- Accepted as PhD. student under direction of R. Le Gac in the LHCb group of CPPM

PhD.: the subject

Title: Calibration of the flavour tagging algorithm of the LHCb experiment by the measurement of $\sin(2\beta)$

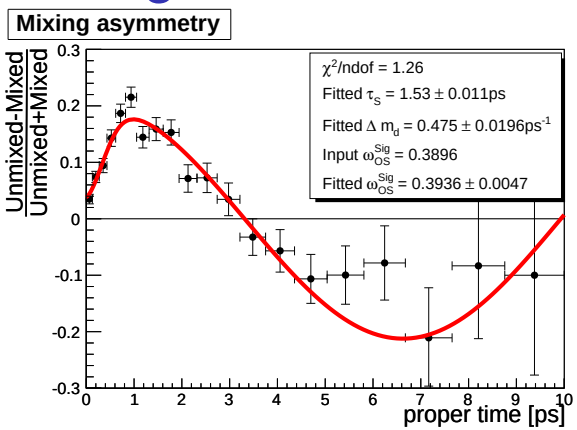
- Selection of control channels: $B^+ \to J/\psi K^+$ and $B^0_d \to J/\psi K^{*0}$
- Measurement of the mistag fraction using B^0_d mixing property
- Measurement of $\sin(2\beta)$ in $B^0_d \to J/\psi K^0_S$ using previously measured mistag rate, systematics' studies

$B^+ \to J/\psi K^+$

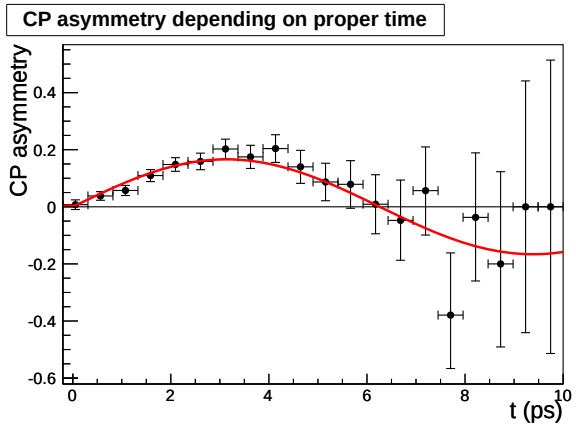
1 245 k events per year

$B/S = 1.6 \pm 0.2$

Mistag fraction



$\sin(2\beta)$



PhD.: Using DIRAC in LHCb

Several millions of events to analyse + thousands of toy MC studies: used DIRAC a lot.

here figure

I wanted to continue working with this tool.

Part III

CERN fellowship

The project

- Applied for fellowship at CERN, emphasis on DIRAC in LHCb
- Contacted by L. Linssen (LCD group) to develop a DIRAC instance for the ILC VO:
    - Aim is mass production of Monte Carlo data for the CLIC Conceptual Design Report (CDR): benchmark of 2 detector concepts (ILD and SiD)
- Running productions

The ILCDIRAC instance

The need of a production system for the CDR made the LCD group turn towards DIRAC, well proven solution from LHCb.
ILCDIRAC: DIRAC instance dedicated to the linear collider community:

- Specific interface to handle ILC applications: 6 different types with different user interfaces
- More than 2 million jobs processed in 1 year: CLIC CDR production and user jobs
- Users not only at CERN, but also LAL (Fr.), MPI (De.), VINCA (R.S.), etc.
- Adopted by the SiD detector concept as the official production system for the next ILC document: the DBD.

Part IV

Current duties

Current duties

ILCDIRAC management:

- Development of new features
- Monitoring of VOBOX status
- Installation and setup of services
- Interaction with storage

Mass Production:

- Generator: setup of applications, registration of new process; tests
- Production manager: definition of new productions, monitor statuses, produce statistics
- Data manager: make sure the data is where it's supposed to be, replicate when needed, check availability of resources

Current duties (Cont'd)

Other:

- $t\bar{t}$ at 500GeV analysis convener: one of the 6 benchmark channels for the CLIC detectors, small group
- LCD group computing coordinator: who has which computer? Who needs one?
- Student supervision: P. Majewski, E. Hidle and C. B. Lam

Part V

Conclusion

Conclusion

- I'm a physicist
- with computing interest, in particular DIRAC
- Changing experiment was very interesting
- Developing ILCDIRAC implied looking deeply into DIRAC: service and agents, configuration, etc.
- Ready to take responsibilities

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