My experience as a VUB physics master student - Kevin Turbang

Some of the **electives** I took:

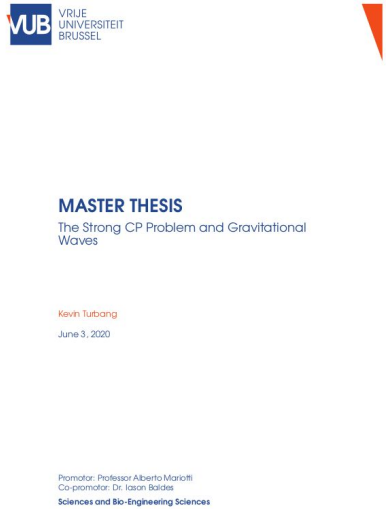
- Advanced field theory
- Electro-Weak and Strong interactions
- Quantum black holes and holography
- Magnetism
- C++ programming
- Extensions of the SM
- Nonlinear dynamics and chaos
- …

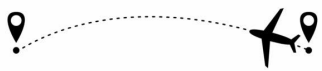
Keep an open mind and talk to others

Master thesis

Beyond the Standard Model
+
GW physics

- Availability of promotor
- Guidance of co-promotor
- First peak inside research world





Mobility

Internship at Cleveland State University (Ohio, USA) on atmospheric physics

What about after VUB?
More VUB of course…

PhD on GW physics within LIGO-Virgo-KAGRA

Credit: Virgo

MASTER IN PHYSICS AND ASTRONOMY

INTEREST IN THEORETICAL PHYSICS?

- Selection of elective courses at **VUB**:
  - Early Universe Cosmology (shared with Leuven)
  - Electroweak and Strong Interactions
  - Object-Oriented Programming (C++) for physicists

- Mobility:
  - **Leuven:** Advanced Field Theory; Advanced Quantum Field Theory
  - **Gent:** Quantum Black Holes and Holography; Quantum Computing; Strongly Correlated Quantum Systems
  - **ULB or Leuven (?):** course on Lie groups
  - **CERN:** see next slide

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Summer Student Programme

The programme is currently open for applications. All applications should reach us no later than 12 noon CET on 31 January 2022. The selections will take place over the period of March/April.

The CERN Summer Student Programme offers students pursuing bachelor's or master's degrees in physics, computing, engineering and maths a unique opportunity to join in the day-to-day work of research teams participating in experiments at CERN in Geneva, Switzerland. Beyond the outstanding first-class scientific value of their stay, the selected students will find working in a multidisciplinary and multicultural environment an extremely enriching personal experience. It is an once-in-a-lifetime opportunity to make valuable and long-lasting contacts with other students and scientists from all over the world.

In addition to the work in the experimental teams, Summer Students attend a series of lectures specially prepared for them. Several scientists from around the world share their knowledge about a wide range of topics in the fields of theoretical and experimental particle physics and computing. Visits to the accelerators and experimental areas are also part of the programme, as well as discussion sessions, workshops and a poster session. Students are required to prepare a short report on their work at CERN, which should be submitted at the end of their stay. Students come for between eight weeks (minimum stay) and 13 weeks (maximum stay).

The application form is available on the Careers at CERN website (all nationals are welcome to apply).

Master of physics at the VUB

My experience

Electives & Mobility

Experience other universities and meet new people. Either with **mobility** courses, for example

- History & Philosophy of Science (**UGent**)
- Medical Physics (**UGent**)

Or through electives which are only partially lectured at the VUB, for example

- Experimental Techniques in Particle Physics (**VUB - UAntwerpen**)
- Early Universe Cosmology (**VUB – KULeuven**)
- Extensions of the SM (**VUB – ULB**)

Master thesis

During my master thesis, I was able to

- Become familiar with concepts and techniques that were not explored in courses
- Collaborate with promotor and co-promotor in weekly meetings
- Experience what it's like to be part of a research group

If you need more information (e.g. about choosing a topic), do not hesitate to contact professors/research groups.

Communication is key!

Nordin Breugelmans

https://iihe.ac.be/sites/default/files/thesis-nordin-breugelmans-cms-master-2021pdf/thesis-nordin-breugelmans-cms-master-2021.pdf