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# PhD student in (astro)particle physics at Humboldt University

## HowTo?

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### General remarks

One of the most challenging aspects of a PhD is to understand how to take ownership of your project. There will be many people around you with more experience, and they will be more than happy to give advice and guide you especially through the first weeks and months of your project. Ultimately, it is crucial for you to understand that the PhD is **your own** project, that you need to master and feel responsible for. Your supervisors are responsible for creating a good environment for you, you are responsible for your work, in close interaction with your supervisors.

### The very first thing

Study the "Promotionsordnung" relevant for you. This document is legally binding and defines the procedures you will have to follow. You will find links to the document on the web page of the Faculty for Natural Sciences: <https://fakultaeten.hu-berlin.de/de/mnf/wisskar/promotionen/erabpr>

### Starting as a PhD student at the HU

- Enroll as a PhD student @HU; ask your supervisor and fellow students for advice if needed.
- Ask your supervisor whether you are required to follow any lectures and/or take any exams as prerequisite of being admitted as PhD student.

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## Being a PhD student at the HU

- Consider making a project plan in the first few weeks of your PhD and update it regularly as you go along and start to define your project more concretely.
- Attending research seminars is an essential element of a PhD project and is a preparation for your PhD defence and the questions you will face there. Therefore, always attend the research seminar (POETS) in Adlershof/Zeuthen. Subscribe here:  
<https://www.physik.hu-berlin.de/de/eephys/teaching/seminars/researchseminar>
- If you are not working in Berlin/Zeuthen (you might be at CERN or in Hamburg), go to the corresponding weekly seminars there. Beware! Your supervisor will have to confirm in a written statement that you have fulfilled this requirement.
- Make sure that you present the (possibly preliminary) results of your own research in the research seminar at least once during your time as a PhD student.
- Stay in contact with fellow students. Go to their defences to learn about the questions which typically have to be answered. If you couldn't have answered them yourself, discuss them with your supervisor and other colleagues.
- As a PhD student, you are also expected to contribute to teaching, even if you formally don't have teaching duties. Typically, you would act as tutor for a lab class or for a lecture in one or two University terms during your time as a PhD student. Note that teaching experience is important for your CV.

## Writing up and preparing for the defence

- If in doubt, try to learn from your fellow students, how the formal procedure works. In case you have questions, ask your local supervisor.
- While writing the thesis, discuss with your supervisor who could be on your PhD committee. The committee will have members from the HU (called internal) and members from other institutions (called external). The majority of the committee members have to come from the HU. A committee normally consists of:
  - Two internal referees, one being your supervisor.
  - One external referee. He/she should be independent (different experiment, no common publications with you or anybody else in the committee).
  - One chair and one additional member, both internal. Either the chair or the additional member must be from a different

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“Schwerpunkt”, i. e. *not* from particle physics, mathematical physics, astroparticle physics, cosmology or accelerator physics.

- Check that your supervisor has asked the committee members whether they would be available.
- Note that your supervisor has to write an essay about the committee, explaining why everybody is competent, why the external referee is totally unbiased etc. This might be a bit tricky at times because there might simply not be a person on this planet who is competent and has no common publications with anybody else in the committee. We normally argue for an exception in such a case! It is the task of your supervisor to propose the committee to the faculty and to send the essay. Double check in due time with your supervisor that this has been done.

## Finishing

Follow the procedures described on the web page of the faculty:  
<https://fakultaeten.hu-berlin.de/de/mnf/wisskar/promotionen/erabpr>

- Keep the timeline for the defence in mind: After initiating the procedure and handing in the thesis in the “Promotionsbüro”, there will be a delay of at least a week (sometimes unfortunately much longer) before your referees receive the thesis. They will then have two months to send their reports. If you want to be faster, ask your supervisor whether he can try to press the referees. After the reports have been received, they are exposed to all members of the faculty for a period of two weeks. If nobody objects, the committee can then accept your thesis. You may have a look at the reports in the “Promotionsbüro” once they are public to the faculty. Realistically, there will be 3 to 4 months between handing in the thesis and having the defence.
- Once you know a realistic time window for the defence, find possible dates by sending a doodle poll to the committee members. First check possible slots (length of at least 2 hours) with your supervisor and other committee members you can easily talk to personally. Don’t forget to check beforehand when the committee members are teaching, so as to avoid trivial clashes. Then send an appropriate poll to everybody. Stay reasonable! Propose no more than 5 slots at a time. Note that the external referee normally doesn't participate in the defence. You need an attendance of at least 50% of the com-

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mittee members and the majority has to be from the HU. But normally, we insist in having all members present, apart from the external referee.

- Once a date is found, book an appropriate room:  
<https://vlvz.physik.hu-berlin.de/> (use field "Raumplan")  
Then pass the information on to the "Promotionsbüro" and the chair of your committee. Explicitly ask the "Promotionsbüro" whether anything else is needed from your side.
- Use the time before the defence to prepare yourself. Think about the questions which are often asked! The first part of the discussion will address the content of your thesis directly. Later on, you will be normally asked questions which are further away from the topic of your thesis. These may be connected to important discoveries or open questions in your field, talks in the research seminar, the last Nobel Prize etc. The sky is the limit. As mentioned above, attending the PhD defences of other students will give you the chance to get a realistic idea.
- When preparing the presentation for the defence, make sure you can explain in all details every word, every formula and every detail in every picture or graph in your talk. Think about questions which could be triggered by what you have on your slides.