

## Protocol of the 3. meeting in the summer semester 2015

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**30.06.2015, 18:00 – 19:00, Seminar room 6/1**

**Participants:** 9: Alexander Herbig, Martin Furhnert, Mathias Scheurer, Simon Kast, Alexander Wlotzka, Julian Gethmann, Konrad Deetz, Robin Roth, Cornelia Hintze

**Guests:**

**Chair:** Konrad Deetz

**Protocol:** Robin Roth

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### Presence of a quorum

We don't have a quorum.

### 1 Acceptance of the agenda

We add "Ombudspersonen" to the agenda.

### 2 Reports

- Meeting of heads of Doktorandenkonvente (08.06.2015)
  - We have the right to get email addresses of all PhD students to send them meeting invitations.

- Ombudspersonen: 4 candidates were announced, they should mediate between PhD students and advisors. We are asked to comment on the candidates.
- Faculty council (03.06.2015): No progress on our requests to get meeting minutes and infos about the PhD exam online.
- Bereichsrat (10.06.2015): We have a new head of our “Bereich” (Physics+Math): Prof. Bluemer
- Upcoming elections for the faculty council: Elections are on 15.07.2015, go and vote (for more PhD students in the faculty council).
- Conference “Visions in Science”, 24.9.-26.9.2015, organized by Max-Planck PhD students (PhDnet)

### **3 Ombudspersonen**

The list of Ombudspersonen is presented. We don't have much information about them. Therefore we don't have a strong opinion. Reports on the individual candidates sound promising.

We'd like to have the right to veto and to suggest candidates. The current situation gives us only the right to “comment”, which is not enough for this position.

### **4 PhD contact person in each institute**

Earlier the idea came up to have a PhD student contact person at each institute. This should make sure that all institutes are informed of changes and information is relayed to the convent. In the best case, contact persons should try to come to the convent or find a replacement from their institute who is able to come. This way we would already have a quorum. Contact persons should look for a successor when they leave the institute.

| Institute | Contact Person  |
|-----------|---|
| AP        | Institut für Angewandte Physik<br>Martin Schumann                                       |
| EKP       | Institut für Experimentelle Kernphysik<br><i>Alex W. will ask someone</i>               |
| GPI       | Geophysikalisches Institut<br><i>Julian will ask</i>                                    |
| IMK       | Institut für Meteorologie und Klimaforschung<br>Konrad Deetz                            |
| PI        | Physikalisches Institut<br><i>Alex H. will ask someone</i>                              |
| TFP       | Institut für Theoretische Festkörperphysik<br>Iris Schwenk                              |
| TKM       | Institut für Theorie der Kondensierten Materie<br>Mareike Hoyer                         |
| TP        | Institut für Theoretische Physik<br>Alexander Wlotzka                                   |
| TTP       | Institut für Theoretische Teilchenphysik<br>Simon Kast                                  |
| IFP       | Institut für Festkörperphysik<br>Cornelia Hintze  |
| IKP       | Institut für Kernphysik<br><i>Robin will ask someone</i>                                |
| INT       | Institut für Nanotechnologie<br><i>Cornelia will ask someone</i>                        |
| IPE       | Institut für Prozessdatenverarbeitung und Elektronik<br><i>Alex W. will ask someone</i> |
| LAS       | Laboratorium für Applikationen der Synchrotronstrahlung<br>Julian Gethmann              |
| LEM       | Laboratorium für Elektronenmikroskopie<br><i>Robin will ask someone</i>                 |

## 5 Evaluation of the online survey

102 people answered the survey. Broken down to public vs. non-public and topic vs. general physics the result is:

|                 |        |
|-----------------|--------|
| public          | 38.2 % |
| non-public      | 55.9 % |
| topic only      | 71.6 % |
| general physics | 22.5 % |

Topic only/general physics is very obvious. Public/Non-Public is less clear and has a tendency towards the current state.

New arguments against topic-only:

- What is a PhD in physics? One should know all fields
- Are you able to learn another field of physics in a couple of weeks?

Pro topic-only:

- it's mostly luck whether one learned exactly what's asked
- doesn't test what one did for 3 years, but only the last weeks of learning

Additional draft: maybe better define non-topic fields: Give one paper the student has to present/explain. Clearly defined research area. Professors have a clearer idea what to ask and what to expect.

If only topic: Longer talk, 30 mins, to be able to go into more detail?

Have an option for the student to choose before the exam:

- questions about physics in general or discuss a given paper
- only about topic

We will create a draft for a paragraph for the Promotionsordnung for two versions: only topic and topic + external paper. At the next meeting we should have a vote on that. That meeting should have an agenda that only has the vote on it. We should try to get as many people as possible there. Date: Still in this semester. Last week of the semester.

The board unanimously agrees to have an extra meeting (this is needed according to our by-laws).

Contact persons should talk to people to come.

## **6 Further wishes/suggestions**

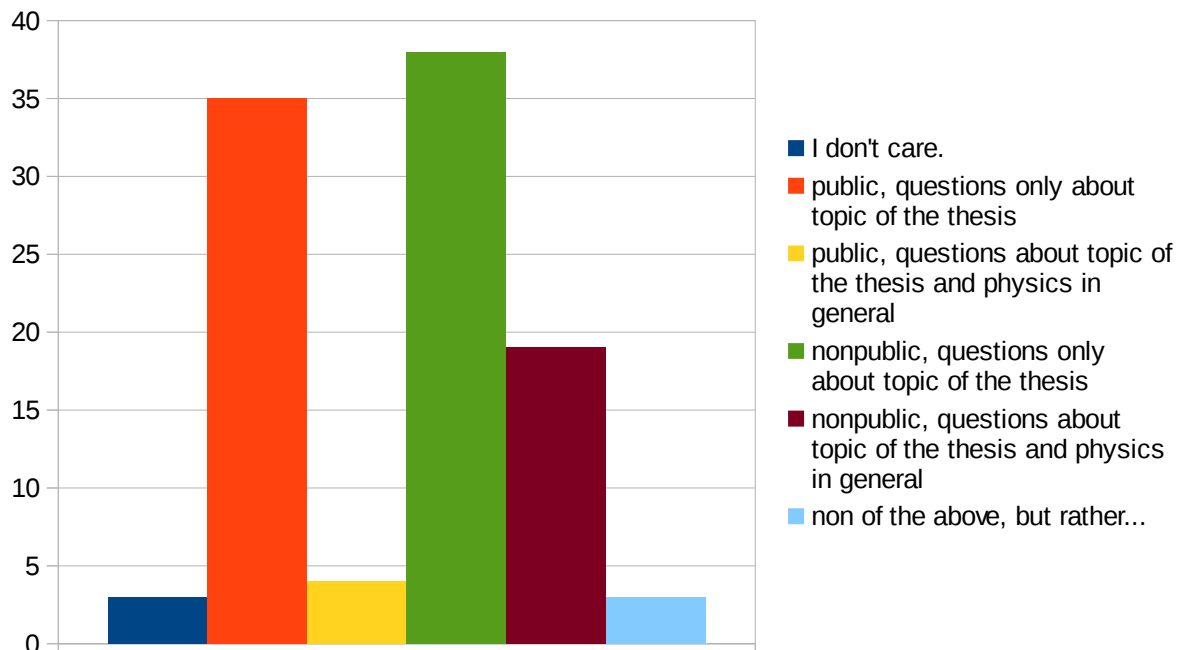
- Insurance: if you have a stipend, do you have insurance for accidents? Especially for experimentalists? With a contract it's obvious, but without?
- Number of tutorials you have to do during your PhD time, varying between 0 and 6. Many stipends forbid to teach, also some contracts. There is no official rule and that's probably the best way to regulate it. Some feel this is unfair.
- "Mutterschutz" does not exist for stipend holders.
- There is a lot of paperwork at the start of the PhD. The "Promotionsvereinbarung" of the KHYS had to be signed, but neither KHYS nor the Dekanat wanted it.

Next date: Doodle

# Results of the survey

## Which type of exam do you consider as the most appropriate one for the PhD exam? (102)

|   | #  |
|---|----|
| I don't care.   | 3  |
| public, questions only about topic of the thesis  | 35 |
| public, questions about topic of the thesis and physics in general  | 4  |
| nonpublic, questions only about topic of the thesis   | 38 |
| nonpublic, questions about topic of the thesis and physics in general (current procedure)   | 19 |
| none of the above, but rather... <ul style="list-style-type: none"> <li>• defense of the thesis, but also exam in at least 2 physical subjects</li> <li>• semipublic (invited colleagues for example): questions focused on thesis but also some space for general questions</li> <li>• Let professors decide, since they know better what's most appropriate and less biased towards a convenient solution than candidates.</li> </ul> | 3  |



## Further comments (pros, cons, suggestions): (23)

- Arrangements with the examiners about the topics they will ask questions about
- In my opinion it is okay to require knowledge on physics in general in the PhD examination. However, it should be clearly limited to basics and to a limited number of different subjects.
- The Public exam only makes sense if the professors change their attitude. If they continue interrogating the candidates like schoolboys a public exam would not improve the situation.
- the exam should be about what the PhD is about, thus about the topic of the thesis and related fields, and nothing else
- Current procedure is fine. Why change anything?
- I think both aspects are important: public defense of the thesis, but also some kind of exam in a subject that covers not only the physics around the topic of the thesis. The latter one could also be an exam that is not on the same day as the defense.
- As an international student, I have found it quite difficult to ascertain the subject areas of the current exam. Furthermore, my master's degree took a much more broad stance than the focus at KIT. In essence, I would be learning excess material, which does not directly pertain to my work for a singular exam. This seems foolhardy to me, especially with many PhDs already taking extra months of work to finish writing their theses.
- It has to be specified who is allowed to ask questions in the public scenarios. Since the variance goes up if anyone can ask questions it seems like a bad format. Also it seems weird to have the general public to be able to ask anything since you can have your friends ask some predefined questions. It seems that this will naturally cause lengthier exams.
- questions only about the topic is most important, I wouldn't mind if the presentation is public. Außerdem sollte die Notengebung bekannt sein, zB 2/3 schriftliche Arbeit, 1/3 die Prüfung und diese wieder in Fähigkeit zu Präsentieren, Inhalt und Fragen=Verständnis zu unterteilen.
- I have heard a suggestions which goes like this: Some weeks before the exam you basically get some papers or material you have to read and study and understand for the exam. Then the Professor will ask you about your thesis and the stuff you had to prepare. This way it can be tested if you are able to become acquainted with a topic maybe even unknown to you before in a short period of time, which should be a basic ability for every PhD student.
- Also would be nice to forget about such an obsolete tradition as using posters during the exam and switch to the modern tools such as presentation and beamer. And probably it makes no sense to have grades for the exam since later on it is really hard to say what this particular grade means and moreover evaluation system differs from institute to institute.
- I would prefer that the questions will be about the topic of the thesis and research areas and basics of physics which are related and relevant to it. Public or non-public is IMHO secondary and could be for example up to the choice of the PdD student? I think if someone does research about experimental optics then he should not be asked about theoretical

particle physics, meteorology etc. The oral exams during the Physics Masters are the correct place to ensure that one has general knowledge about all areas of Physics. I don't think that making every PhD student repeat every course he took during his studies is reasonable. Why not renewing a bit the format of the Physics PhD defense at KIT and get it closer to what other universities in Germany do. The format of this exam is one reason that makes KIT unattractive to potential PhD students in Physics coming from other places. Also information about the exam, how it works, what to expect, what other people experienced are rather intransparent and inaccessible to new PhD students and it all depends on rumours and what is being said in the hallways of labs. Not quite the way that modern research facilities should act towards the backbone of their research: The PhD students. The fame of being tortured in this exam behind closed doors is something that people associate with a PhD in Physics in Karlsruhe and I think this makes the experience of research in Karlsruhe unnecessarily stressful and less attractive than it could be. And also it might leave a good feeling of "I survived that exam" but might rather leave a bad aftertaste of one's PhD in Germany. Maybe someone should pass on this insight into what me and colleagues I talked to think and have heard to the Physics Faculty and professors so they can reconsider what they think about the current exam form and the information policy that goes with it. Thank you.

- I think a general physics education is important for every PhD
- Der Rahmen darf sich außer dem Thema gern auch auf das Allerwichtigste in der Physik beziehen. Wenn die Professoren sich aber nicht einigen können keine Fragen zu TTP7 zu stellen, hilft vielleicht ein verbindlicher Schlagwortkatalog mit rund 100 wichtigen Dingen, die man neben seiner Arbeit erklären können muss. Den können die Professoren gern selbst erstellen.
- "questions only about topic of the thesis" is the most important aspect for me. I don't really care if it's public or not, but would rather prefer public.
- I've been in the US and this is how it was. Just a small presentation of the topic with a handful of questions about the topic itself. There also was just the professors that really had to do something with the field and not a whole range of people that don't understand it anyway. I have nothing to do with particle/nuclear physics and I have no hope that a change to the public, only on topic questions will spare me from such physics questions. I can already imagine them asking "...well your \*insert whatever\* is found within/next to atoms, in these atoms you have a core and within that you have quarks, \*insert question about quarks\*". Or your \*insert whatever\* has mass, explain the Higgs mechanism. I doubt that anybody of us is doing physics without mass in vacuum.
- public or nonpublic (do not care) but: questions should be about the thesis and related topics
- The current procedure is fine, because: - the candidate shows that he can present his topic to other physicists - the candidate shows that he can discuss general physics with colleagues - presenting a specialized topic to the general public would oversimplify the topic - professors have to be nice either way, since they don't want to backfire on their own candidates - public can be more "embarrassing" or stressful than non-public

- public or nonpublic is not important for me, but I think, with the exam for the diploma or master we already had shown our knowledge of physics.
- An exam which is only public for members of the faculty/department/ institute with questions only about the topic seems most reasonably for me.
- Man "beweist" mit dem Diplom/Master, dass man sich allgemein mit Physik auskennt, spezialisiert sich dann 3-4 Jahre und wird wieder zu Allgemeinem befragt -> Ergibt fuer mich wenig Sinn. Die Arbeit ist die zentrale Leistung, das andere macht die Pruefung nur unnoetig unangenehm.
- If people work in the industry after the PhD it makes absolutely no sense to have an exam about physics in general at the end of the PhD. A general physics exam would make more sense at the beginning of the PhD.
- In my opinion, a public defense (in the sense that family/friends and institute members could attend) of the thesis is most appropriate, giving the PhD candidate the opportunity to present what he's been working on for the past years. Therefore, I think the focus of the exam should be on the topic of the thesis. If there are questions on related fields of physics, they should be limited to a basic level, since it is impossible to possess knowledge of the latest progress in all fields of physics. The current procedure seems to be rather focused on demonstrating the candidate's shortcomings than evaluating his scientific work, and none of the people involved in such an exam can take any benefit from it.



# Discussing §8 of the Promotionsordnung

(For the current version, see page 2.)

## 1 What could be possible changes?

- public or nonpublic exam?
  - public:
    - \* helpful for other students
    - \* professors have to be nice/fair
    - \* can be a festive event, parents in the audience, ...
    - \* also tests whether one can present to the general public
  - nonpublic:
    - \* less embarrassing
    - \* more like an exam
- questions only about the topic or physics in general?
  - Rigorosum (questions on physics in general):
    - \* easier, as people do not expect you to know other fields of physics as well as your own
  - Disputation (long presentation and questions only on your topic):
    - \* it's what you worked on for 3+ years
    - \* you can be expected to really know details there
- graded or ungraded?
  - graded: allows to differentiate between students
  - ungraded: there's no meaning to the grade anyway
- further aspects that could be discussed:
  - duration and structure of the talk
  - aims of the exam (depth, breadth, knowledge, ability to present, ...)
  - maximal duration of the exam
  - How is the grade determined (dissertation, oral exam, own subject, general physics questions)?

## 2 Current version of §8 of the Promotionsordnung

- Promotionsordnung der Fakultät für Physik vom 15.08.2006:  
<http://www.physik.kit.edu/Studium/Studienplaene/Promotionsordnung-2006.pdf>
- Satzungsänderung zur Promotionsordnung der Fakultät für Physik vom 30.11.2012:  
<http://www.physik.kit.edu/Studium/Studienplaene/Promotionsordnung-2012-Aenderung.pdf>

### § 8 Mündliche Prüfung

(1) Ist die Arbeit angenommen, so bestimmt der Dekan den Termin und die Art der mündlichen Prüfung.

(2) Es gibt zwei Arten der mündlichen Prüfung:

a) Kolloquium in dem gewählten Fach nach § 1 Abs. 1

b) Prüfung im Promotionsfach als Hauptfach und in zwei Nebenfächern.

Der Regelfall ist das Kolloquium. Der Dekan kann in begründeten Fällen oder auf begründeten Antrag des Kandidaten eine Prüfung gem. Satz 1 b) festlegen.

In beiden Fällen sind die Prüfungen mit jedem Kandidaten einzeln vorzunehmen.

(3) Die Prüfung nach Absatz 2 a) findet in der Form eines mindestens einstündigen Kolloquiums statt, zu dem die Referenten, die Professoren, Hochschul- und Privatdozenten der Fakultät sowie der Rektor und die Dekane der anderen Fakultäten einzuladen sind. Auf Vorschlag des Referenten kann der Dekan weitere Teilnehmer zulassen. Im Kolloquium soll der Kandidat zeigen, dass er den Problemkreis seiner Dissertation gründlich beherrscht und deren Verbindung zu anderen Bereichen seines Fachs erkannt hat. Alle Professoren, Hochschul- und Privatdozenten haben das Recht, Fragen zu stellen. Der Dekan oder ein von ihm nach § 6 Abs. 1 benannter Professor führt den Vorsitz.

(4) Doktoranden der Fakultät können nach Maßgabe der vorhandenen Plätze als Zuhörer an den Prüfungen teilnehmen. Die Teilnahme erstreckt sich nicht auf die Beratung und auf die Bekanntgabe des Prüfungsergebnisses. Aus wichtigen Gründen oder auf Antrag des Kandidaten sind Zuhörer auszuschließen.

(5) Das mündliche Examen nach Absatz 2 b) besteht aus einer Prüfung im Hauptfach und den beiden Nebenfächern von je etwa einer Stunde Dauer. Die vom Kandidaten gewählten Nebenfächer bedürfen der Zustimmung des Dekans.

Der Vorsitzende des Prüfungsausschusses bestellt die Prüfer. Der Kandidat kann Vorschläge machen.

Zu jeder Prüfung nach Absatz 2 b) ist ein Professor, Hochschul- oder Privatdozent als Beisitzer hinzuzuziehen.

(6) Für die Beurteilung der mündlichen Leistung gilt § 7 Abs. 1 entsprechend.