



University of Sussex

## Research Students' Annual Review & Interview

### FORM A: Student's Questionnaire

The Annual Review and Interview process is described here:

<http://www.sussex.ac.uk/mps/annualreview>

**As a research student, you are responsible for collecting up all the documents needed for your Annual Review, for arranging the Interview, and for handing in the documents on time.**



**This Questionnaire covers the period: June 2011 to May 2012**

**Do you want your main supervisor to see this questionnaire?**

YES ☒ NO ☐

*Your main supervisor will not attend the interview, although your additional supervisor might be your interviewer. (See the list of interviewees and interviewers on the webpage above). If you want your main supervisor to see this questionnaire, make a photocopy for him/her.*

*If you have any concerns about supervision that you would like to discuss confidentially, contact the Director of Doctoral Studies – Dr Bertram During (Maths) or Prof Seb Oliver (Physics and Astronomy).*

<b>Your name:</b> 	<b>Degree:</b> MPhil <input type="checkbox"/> PhD <input checked="" type="checkbox"/> <b>At entry, what qualification did you hold?</b> BSc <input type="checkbox"/> MPhys <input type="checkbox"/> MSc <input type="checkbox"/>
<b>Current email address:</b>  <b>Please write clearly!</b> <i>We will contact you on this address if there are any issues arising from your Review.</i>	<b>Start Date:</b> <b>End Date:</b> 30-Sep-2012 <i>(These dates can be found in your Sussex Direct account under 'Programme')</i>
<b>1<sup>st</sup> Supervisor's name:</b> Daniel Ldim <b>2<sup>nd</sup> Supervisor's name:</b> Stephan Huber	<b>Current registration status:</b> Full-time <input type="checkbox"/> Part-Time <input type="checkbox"/> Continuation <input type="checkbox"/> <b>Please list dates of any periods of intermission:</b>  How many years (full-time or part-time) have you spent on your studies, excluding periods of intermission? 4

### 1. Funding

Please state your source of funding (even if your main source of funding has now finished)

Source of funding: STFC

Start date of funding: 10/08

End date of funding: 4/12

### 2. Continuation registration

If you are on Continuation registration, do you now have a job?

If YES, what are your hours of work?

### 3. Disabilities

Do you have any recognised disability which has been formally assessed?

YES, dyslexia

If YES, has this been adequately supported?

Yes

### 4. Your Supervision

(a) Frequency of contact. Approximately how many times per month have you been in contact with your supervisors. Has that been satisfactory?

More than once a week. Yes

(b) Quality of supervision. Do you feel that you have been receiving adequate and appropriate feedback and advice from your supervisors? Please state any ways in which you feel this might be improved.

Yes

(c) Additional supervisory support and guidance. Are there any further areas relating to your research where you feel you are in need of additional support and guidance? Please suggest what might be provided.

No

(d) Is it clear to you who you should go to if you encounter problems with your research, or difficulties with a supervisor?

Yes

## 5. Your Thesis

(a) Do you feel that your thesis work is on schedule? (Please provide details of your research plan and status in your Student's Report, not here).

Yes

(b) When do you realistically expect to submit your thesis?

End of July

(c) Has work on your thesis been significantly impeded by any non-academic factors (e.g. illness or financial)?

No

(d) Do you expect work on your thesis to be impeded in the next few months, or the year ahead? (e.g. by job change, childbirth)?

No

(e) Are you keeping a record of literature you will need to cite in your thesis?

Yes

## 6. Additional Training

(a) Please list here all academic courses you have taken, and credits obtained, **since you first registered for your PhD** and which are directly relevant to the academic content of your research. For example, taught MSc courses. Briefly comment on their value to you.

Lectures on heat kernels  
by Roberto Percacci

(b) Please list here all the courses you have taken **since you first registered for your PhD** and which were training in generic or transferable skills. For example, Doctoral School training programmes, DR2 Sussex Postgraduate Skills Programme, SciPS. Briefly comment on their value to you.

• Time management course  
• Presentation skills

(c) Are there any training requirements, identified at previous Review meetings or during meetings with your supervisors, that you feel have not been met?

No

(d) Is there any further training which you feel you need?

No

## 7. Resources / Facilities

*Please indicate any areas where access to resources – e.g. via the library or availability of computing resources – might be improved in order to assist you with your research.*

## 8. Contact with other Research Students

*Are sufficient opportunities available to you for contact and interaction with other research students? Please state any ways in which you feel this could be improved.*

Yes

## 9. Research Activities In your group

*(a) Does your department and/or research group provide a sufficient range of activities to enable you to discuss your research, and related areas of interest, with others engaged in similar fields of study?*

*If not, please suggest some ideas on how this might be improved.*

Yes

*(b) Typically how many research seminars per month do you attend?*

6

## 10. FIRST YEAR STUDENTS ONLY:

*Was the October programme of Induction and Welcome satisfactory? Please state anything that could be improved, or anything additional you consider that should be provided in future years.*

### 11. STUDENTS IN YEAR 2 AND LATER

(a) Have you given a talk on your research to your Department or research team? Please give the title and a brief description of the subject matter of the talk.

(b) Have you given a talk on your research to other Departments, or at an external meeting such as a conference? Please give the title and a brief description of the subject matter of the talk.

Gwen talks at Nottingham  
Graz and Vienna

### 12. Teaching you have undertaken

Please name the courses you taught on, since you arrived at Sussex, and say how many hours work was involved on each, including preparation and marking.

N/A

### 13. Careers guidance

Have you received any careers guidance?

Yes

**14. Any more Comments?**

*Further comments or suggestions for how your experience as a research student could have been/could be enhanced further. Attach an extra sheet of paper if necessary.*

**15. Your signature**

*Please print off this questionnaire. Then sign and date below.*

Student's signature .....

A black rectangular redaction mark covering the student's signature.

Date .....

7/6/2012



University of Sussex

## Research Students' Annual Review & Interview

### FORM B: Supervisor's Questionnaire

The Annual Review and Interview process is described here:

<http://www.sussex.ac.uk/mps/annualreview>

#### Supervisor:

- Please return this completed questionnaire to your student as soon as possible. The student is responsible for collecting up all documents, arranging the interview, and handing in the documents on time.
- It is important to give the questionnaire to the student soon, even if you have not been in recent contact or there is little progress to report.
- You are expected to discuss your questionnaire fully with the student; this may be difficult with students working off-campus or on continuation, but the contents should be conveyed so that he/she knows your views, and can comment if wished.

This Questionnaire covers the period: June 2011 to May 2012

Student's Name:

[REDACTED]

Main Supervisor's Name:

DANIEL LITIM

#### 1. The Student's Progress

Is the student making generally satisfactory progress, in accordance with plans in the research outline?

YES ☒ NO ☐

Please comment on any problems, changes or delays:

[REDACTED] makes excellent progress.  
He has achieved world-class results. ~~and~~  
I expect him to submit a thesis  
in July 2012.



## 2. Frequency of Contact

Has the student kept in touch with you adequately? YES ☒ NO ☐

Do you find the relationship satisfactory? YES ☒ NO ☐

If NO, please suggest what might be done about this:

## 3. Submission of the Thesis

When do you realistically expect the student's thesis to be submitted?

July 2012

## 4. Risk of Late Submission

If there is any risk that s/he will not submit by the end of the official maximum period of registration (or in the case of Research Council funded students, by the four-year deadline), please outline any action that should be taken to address this:

None.

## 5. Non-Academic Impediments

Are there any non-academic factors that may have impeded the student's work?

YES ☐ NO ☒

If YES, please explain:

## 6. Additional Training

(a) To what extent have the student's academic skills training requirements been met? For example, is all coursework complete?

h.o.

(b) Taking into account the needs of the student's research, and their future career plans, do you consider that the student requires any further transferable-skills training or access to additional resources? Please relate your assessment to the joint skills statement of the Research Councils and AHRB on Skills training requirements for research students:-

<http://www.rcuk.ac.uk/documents/researchcareers/jssstrainingrequirements.pdf>

YES ☐ NO ☒

If YES, please identify the areas that require further support/training, and what action/s might be taken to meet these (Please take into account the courses/workshops available via the Doctoral School):

## 7. Additional Support from outside the research team

Are there any other areas where you feel that the student should be provided with additional support?

YES ☐ NO ☒

If YES, please give an indication of the area/s where additional support is required, and what this might consist of.

### 8. Additional Support for the Supervisor(s)

Are there any areas where you feel, in your role as supervisor, that you should be given additional support or training?

YES ☐ NO ☒

If YES, please state:

### 9. Any Other Comments

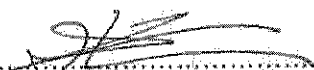
Record here any other matters on which you would like to comment

██████ is an outstanding student of the calibre required for the STFC STEP programme. He has the potential for a successful career in academia. His work attitude is exemplary.  
~~and~~

### 10. Supervisor(s) signatures

Please sign and date this questionnaire, then hand it to your student.

Supervisor(s) signature .....



Date .....

7 / June / 2012



University of Sussex

## Research Students' Annual Review & Interview

### FORM C: Interviewer's Report Form

The Annual Review and Interview process is described here:

<http://www.sussex.ac.uk/mps/annualreview>

#### Interviewer:

- The student should have supplied you with Forms A and B plus his/her Student's Report in advance of the Interview.
- Please complete sections 1-9 of this form during or after the interview.
- After completing and signing this form hand it to the student. Also return Forms A, B, and the Student's Report to the student.

#### Research Student:

- After the interview, read this form and sign section 10.
- Ask your main supervisor to complete and sign section 11 of this form.
- Section 12 will be completed later after you have handed in all the papers.
- Check the webpages (URL above) to see if you need to make any changes to your registration – download and complete the appropriate form if you do.
- Finally, hand in Forms A, B, C, and your Student's Report and any form for changes to your registration. The hand-in location is described on the webpage above.

Interviewer(s) name(s) .....	Huber
Student's Name .....	[REDACTED]
Name(s) of Supervisor(s) ...	Lithm
Date of Interview ...	8.6.12

#### 1. The Student's Written Report:

Comment on the Student's Report and provide an overall assessment.

brief, but contains the relevant milestones

Overall assessment (tick one)

Poor  
Good

<input type="checkbox"/>
<input checked="" type="checkbox"/>

Satisfactory  
Very Good  
Excellent

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

## 2. The Interview

Comment on the interview and provide an overall assessment.

Student can talk very confidently  
and insightfully about his research field

Overall assessment (tick one)

Poor ☐  
Good ☐

Satisfactory ☐  
Very Good ☒  
Excellent ☐

## 3. Specific Questions

Please supply answers to the following:

- (a) Does the student understand the research problem?
- (b) Is the student aware of the relevant literature on the subject?
- (c) Has the student the capacity to pursue research?
- (d) Has the student prepared a realistic research plan and schedule?
- (e) Is the student of PhD/MPhil calibre, as appropriate?
- (f) Has the student presented a seminar?

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

His is almost finished!

## 4. English Proficiency

Is the student's proficiency in English sufficient for him/her to write a research thesis?

Yes ☒ No ☐

## 5. Career Opportunities

Has the student considered career opportunities, and do they know where to look for jobs, and by what time they need to apply?

Yes ☒ No ☐

## 6. Skills Training

Is there any skills training you recommend the student to undertake?

Yes ☐ No ☒

If yes, please specify

### 7. Your recommendations for the Student's research

Base your recommendations on the Student's Report and the Interview.

Student is about to complete his  
thesis, which contains work  
of very high standard

### 8. Registration

Do you recommend this student should remain registered for a DPhil / MPhil degree?

Yes ☒ No ☐ Provisional ☐

If the answer is NO or Provisional, what course of action do you recommend?

If yes, have you discussed with the student how much time they have had studying for their degree  
and whether they now need an extension, or could go onto Continuation for writing up?

Yes ☒ No ☐


When in your estimation will the thesis be ready for submission?

July 2012

### 9. Interviewer's signatures

Please sign and date and hand this form to the student.

Interviewer(s) Names ..... Huber

Signature(s): ..... 

Date ..... 8.6.12

### 10. Student's acknowledgement

I have read this report.

Student's signature ..... 

The student should now hand this form to their supervisor to complete Section 11.

**11. The Supervisor(s)**

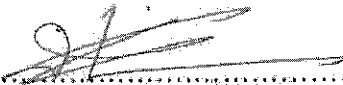
*Have you and the student agreed definite objectives and a timetable for the coming year? This is particularly important for Distance Learners.*

Yes ☐ No ☐

*Please make any additional comments here.*

 is finishing by Sep 2012.

Supervisor's signature .....



***The supervisor should now return this form to the student for handing in.***

## 12. Director's Review

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*The Director of Doctoral Studies should comment here after the student has handed in all the papers.*

*Do you recommend re-registration for the coming year?*


Yes ☐ No ☒ Provisional ☐

*Do you recommend the student should re-register with "Continuation Status" (i.e. the student's research is completed and he/she is writing up a thesis).*

Yes ☐ No ☐ Not applicable ☐

*Please make any additional comments here.*

*Student should have completed*

Signed:  .....

Date: *26/7/2012* .....

**Now send all papers to the Research & Enterprise Co-ordinator.**



## Annual Review 2012

  
<sup>a</sup>Department of Physics and Astronomy, University of Sussex, Brighton BN1 9QH, U.K.

I'm now in the final stages of my PhD. and am writing my thesis. Currently I have written two chapters on "the functional renormalisation group" and "higher dimensional black holes in asymptotic safety" and also finishing a third chapter on the  $F(R)$  renormalisation group (RG) flow. In total my thesis draft is 100 pages long and is two thirds complete. I also have a timetable for my thesis write up and aim to finish by the end of July.

This month I will finish two papers and submit them to the Arxiv. The first is titled "black hole thermodynamics under the microscope" and contains many results which have been obtained studying renormalisation group effects on black hole thermodynamics. Here we successfully combine black hole thermodynamics with the RG running of couplings. I have given talks in Graz University, Vienna TU and Nottingham University on this work.

The second paper is on fixed points in  $F(R)$  gravity in four dimensions titled "fixed points of  $F(R)$  gravity". Here we find a UV fixed point in polynomial approximation to the effective average action with up to the 34th power of scalar curvature  $R$ . Furthermore, we show the convergence of the fixed point for increasing orders and show that the critical surface remains three dimensional. These results provide evidence for the asymptotic safety conjecture for quantum gravity.

Also in my thesis I will include work on thermodynamics of RG improved black hole space-times, evaporating black holes in  $d$ -dimensions and black hole production at colliders within the asymptotic safety scenario. These will provide additional chapters to my thesis. In addition I will also write two more papers on these topics.

In March I have attended the 499. WE-Heraeus-Seminar "Exploring quantum spacetime" in Bad Honnef. This work shop included talks on a variety of approaches to quantum gravity. Also in september I will attend the exact renormalisation group conference in France.

Since I will be finishing my PhD. in the next few months I am also looking for possible postdoctorate positions and funding sources. I am therefore going to apply for the STFC STEP programme.