SECTION 6: RESEARCH SUPERVISION RECORD

Full-time students - a minimum of 6 supervision records must be completed each year.
Part-time students – a minimum of 3 supervision records each year

Name of Research Student: Qian Hong

Name of School/Centre: Computing, Engineering & Physical Sciences

Name of Supervisors present: Dr Simon.P.Platt

Title of Project:

Semiconductor detector for fluence measurements in simulated cosmic-ray fields

Date/Time of Meeting: 15/10/2013

Summary of activities since last meeting:

1. REDECS2013_Oxford Attend
2. Poster and paper preparing
3. ISIS and Diamond visiting
4. Steel Collimator attached on ANITA model

Comments by Supervisors: [Continue on separate sheet if necessary]

See Email attachment below:

Monthly reporting

The monthly progress meetings should follow this format:

1. You should prepare a report in advance (i.e. the day before or earlier the same day) for Stephen and me, in PDF format.
2. You should prepare a presentation for the meeting and give the presentation to Stephen and me. The presentation should explain the report, so that it should not be necessary for us to study the report in detail beforehand and so that you will not need to produce the report a long time in advance.
3. You should prepare minutes of the meeting shortly afterwards, on the same day. These should be a very brief record of the meeting to aid your memory as well as Stephen's and mine.

The agenda for the meeting and therefore the structure of the report and presentation should have the following sections

1. Current plan.
2. Progress made against the plan.
3. Achievements since the last meeting.
4. Difficulties encountered since the last meeting.
5. Next steps.
6. Actions.
7. Revised plan.

Notes:
The content of the report and presentation should cover points 1 to 5. Points 2 to 5 should include technical detail.
The minutes of the meeting should concentrate on points 6 and 7. You should use the Graduate Research School proforma for this.
The plan will always include a Gantt chart, it may also include other information such as a risk log and budget.
The meeting should be scheduled for one hour.
All the paperwork (plans, report, presentation, minutes) should go in your progress file.
We should have our next meeting, for the end of October, in about a fortnight, and meetings monthly thereafter.

Background radiation:

Information about the neutron and gamma background - spectrum and fluence rate - is very useful. Probably you should calculate it by placing a Geant4 detector directly against the collimator/shielding; calculating the radiation leaking from the shielding.

Take care that your results, and conclusions based on those results, account for the limitations of your model. Make sure that you understand the model limitations and their significance.

Direct comparisons:

Make sure that you present direct comparisons when you make a simulation. In your simulations you have variables and you must present comparisons that show the influence of those variables. You can vary angle, for example, and then you need to compare results at different angles. If you vary a physics model, you need to compare results for different physics models directly (e.g. on the same graph), not compare results for different angles with each physic model on its own graph.

Hadron physics models

You should write an email to Peter Truscott. Explain to him that you are doing Geant4 simulations of neutron production at spallation sources including ANITA and LANSCE. Send him the RADECS paper. Explain that we observe that the Binary model appears to reproduce measurements better than the Bertini model in our application. Ask him whether he can direct you to some references that might help you understand the differences between the models and help you to make the right choice of hadron physics models in future simulations.

Simon

Director of Studies Signature:
Date:

Comments by Research Student: [Continue on separate sheet if necessary]

1. The suggestions and questions about my presentation is quite useful, especially about synthesis (conclusion, results, analysis,etc)
2. The recommends about monthly meeting structure is good, which make monthly meeting organized efficiency.
3. The ANITA model with collimator, 4 detection points (0deg, 15deg, 30deg and 60deg), the results at 30deg and 60deg are not good enough. The collimator is not covered all region so that neutron flux at 60deg is much higher.

Student Signature: Qian Hong
Date: 15/Oct/2013

Agreed plans for period before the next meeting
[Please include an agreed plan for the next research period, including training plans, if applicable]

1. The agenda for the meeting should be ready for the next meeting
2. Meeting report and PPT could be PDF format to show in the next meeting
3. Steel collimator plus lead could be added in ANITA model.
4. Difference between Binary and Bertini model could be investigated by reading paper

Proposed date/time of next meeting: 30/Oct/2013

Time: 30/Oct/2013 Location: CM036

Copies: Student & Supervisors