Progress Report: ARDENT

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Attended Conferences

6-7 December 2012: Mini- Micro- and Nano-Dosimetry conference, Wollongong, Australia

- An overview of current developments in MMND

3-7 June 2013: NEUDOS 12, Aix en Provence, France

- An overview of current status in many aspects of Neutron and Ion dosimetry

Planned conferences:

22 October – 2 November: IEEE 2013, Seoul, Korea

- I will present results of measurements, currently being analysed

Attended Workshops

8-9 December, 2012: IPCT Workshop, Wollongong, Australia

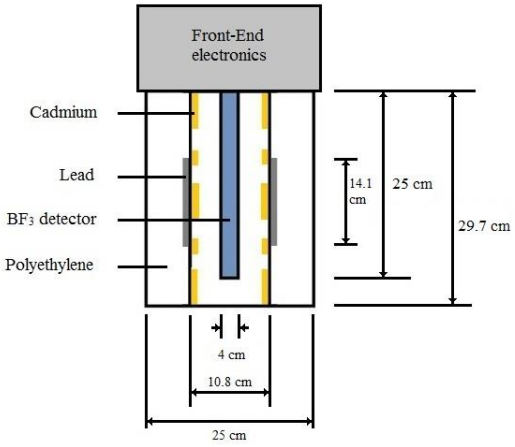
- Workshop dealing with prostate cancer treatment modalities, including case studies of patients

1-8 February, 2013: ISOTDAQ workshop, Thessaloniki, Greece

- Covered many aspects of Trigger and data acquisition
- Half lectures, half laboratory exercises on the given topics, such as networking

Experimental Campaigns

- Measurements at Proton Synchrotron at CERN
- Measurements at the HiRadMat facility at CERN
- Measurements around Free-Electron Laser at PSI, Switzerland

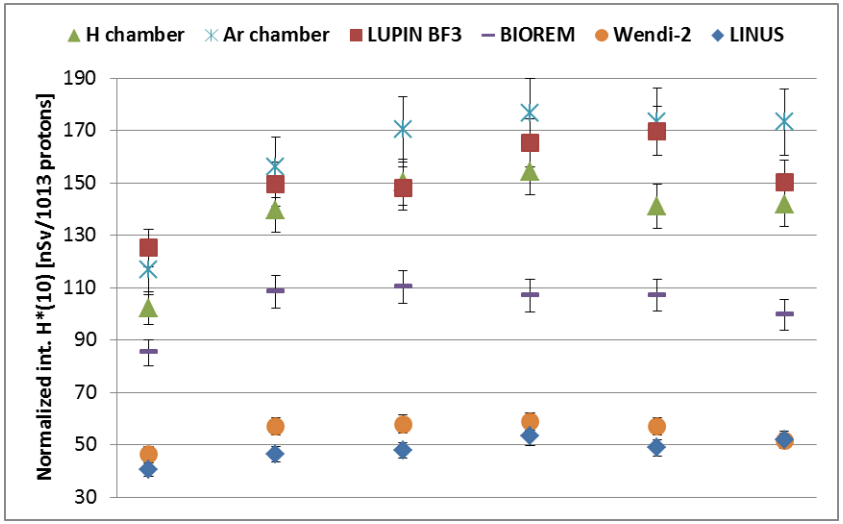


Details: PS Measurements

- Measurements conducted at 3 positions around the PS facility at CERN
- For one of these positions (Septum 16), I was personally involved in the data analysis, however I wasn't able to participate in the measurements themselves
- The results obtained were presented at the Neudos Conference in Aix en Provence, France (Oral presentation)
- This also resulted in a paper being published in Radiation protection dosimetry

Details: PS Measurements

Pictured is an example from the PS measurements, showing the different detectors used in each of the 6 positions

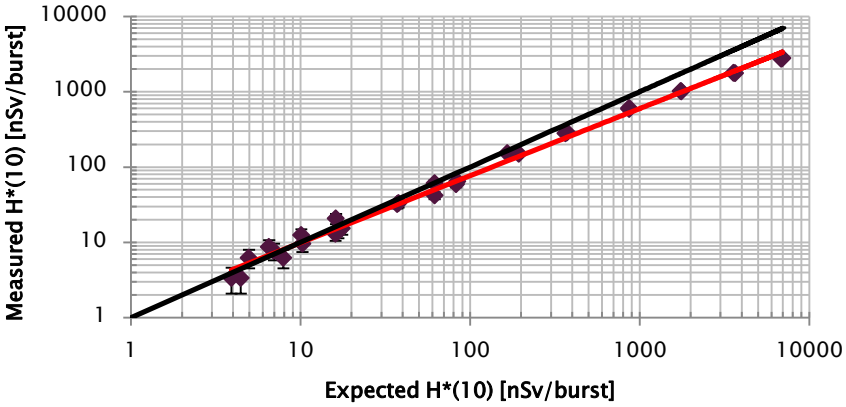


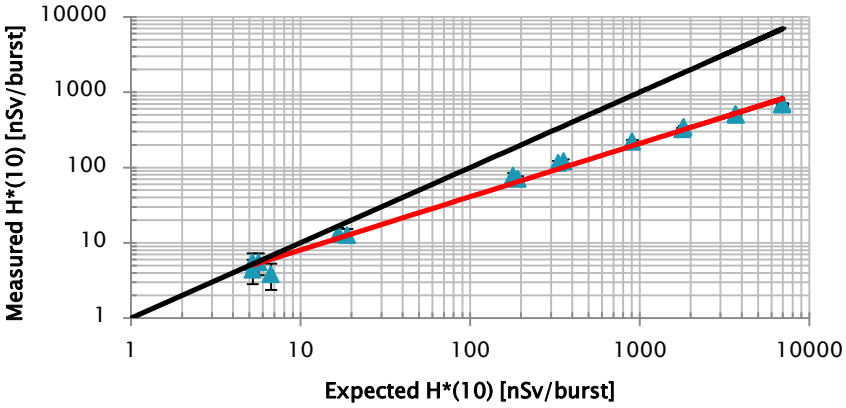
Details: HiRadMat Measurements

- I was able to briefly participate in taking measurements at HiRadMat
- HiRadMat is a new facility at CERN, for testing the effects of High intensity Radiation on Materials
- I was also involved in the Data analysis, and helped to write a paper based on these measurements
- This paper has been submitted to Radiation Measurements and is pending review

Details: HiRadMat Measurements

Example plots of detector response for LUPIN (top) and Biorem (bottom). It can be seen that the LUPIN provides response much closer to ideal than the commercial detector.





Details: PSI Measurement

- I was able to take a very active role in this campaign
- Took measurements with LUPIN 3He and BF3 versions, as well as BSS
- Results still being analysed
- Will present a method used to descriminate between photons and neutrons at IEEE in Korea

Planned Measurements

- It is also foreseen that the LUPIN will be used to measure the stray neutron field from a medical LINAC
- This measurement will also involve CR-39, and will therefore be a joint campaign with Alvin Naik (ESR-13)
- Idea is to test the feasibility of using LUPIN to monitor stray field during treatment

Thanks for your attention!