

JRA planning meeting: future target/source technologies, University of Huddersfield, 4th February 2014

Agenda:

1. Review of the work done by Huddersfield University
2. Review of the JRA – deliverables in FP7-II
3. Forward look to collaborative work

Attending:

1. Steve Cottrell
2. Adrian Hillier
3. James Lord
4. Bob Cywinski
5. Sue Kilcoyne
6. Rodger Barlow
7. Adriana Bungau
8. Cristian Bungau
9. Jamie Peck

Discussion:

1. Review of work done by Huddersfield University

Adriana Bungau presented an overview of the studies titled 'Geometry optimisation of the ISIS muon target'. This work was based on simulations with the Monte Carlo code GEANT 4 (2008-2011) in which three models were validated against experimental data from the Lawrence Laboratory.

Ideas for future simulations were discussed, including the possibility of investigating different geometries, material densities and target topographies. Present work at PSI investigating muon production from neutron spallation targets was discussed, an exciting development that is still in the early stages of development.

2. Overview of JRA work

Steve Cottrell presented an overview of the work conducted in JRA 5 FP7 (2009-2013) and work of the current JRA in NMI3-II (2012-2016).

3. Forward look to collaborative work

Steve Cottrell highlighted the area of work within the present JRA, focussing on a concept study for future high intensity muon sources. The task area involves two deliverables, a study of target technologies and a forward look to high intensity muon sources. It was agreed to take this forward through collaborative work between the Huddersfield and ISIS groups.

It was agreed that an overview of target technologies could be achieved using results from simulation codes based on GEANT4. James Lord and Jamie Peck were tasked with writing the report on target technologies and their optimal configuration for muon production based on this earlier work to complete the first deliverable.

Steve Cottrell suggested a workshop to satisfy the second deliverable, this would involve discussions on production target technologies, beam optics and future facilities. In order to ensure the availability of facilities, a date outside the academic term was suggested. Bob Cywinski suggested

holding the workshop at Huddersfield University and Sue Kilcoyne went on to clarify some details; suggesting it could be a 1 -2 day event with a mixture of short talks and discussion sessions. It was agreed that dates would be considered, with autumn 2014 suggested provisionally.

Other topics discussed the merits of re-engaging with the ESS were discussed. Steve Cottrell suggested we consider which μ SR experiments could utilise a long pulse.

Steve Cottrell mentioned the possibility of combining this work in a future Horizon 2020 proposal, stressing however, that participation of the Neutron and Muon community was uncertain at this stage. Bob Cywinski saw many areas that could be developed with funding for a PDRA.