

Minutes of the First Meeting of the Physics & Instrumentation Task of the EURISOL Design Study

Liverpool, 24th June 2005

T10-01,Liverpool,240605

Present: B. Blank, P.A. Butler, A. Bonaccorso, P.T. Greenlees, H. Mach, A. Kordyasz, R.D. Page, M. Romoli, K. Subotic, M. Veselsky, P.M. Walker

Apologies: D. Beaumel, P. Chomaz, F. Negoita, N.A. Orr, E. Pollacco, K.-H. Schmidt, C. Volpe

- 1. Feedback from EURISOL DS Management:** PAB presented an overview of the EURISOL Design Study explaining its financing, management structure, milestones and deliverables. The objectives for Task 10 were defined as follows:

A few key experiments, among those recommended in the EURISOL RTD Report should be chosen. The feasibility of the experimental methods should be demonstrated through detailed simulations. This will allow the properties of the beams required to be specified in greater detail, feeding into other aspects of the Design Study.

Instrumentation employing frontier technology essential for delivering the science should be identified and design and costing work undertaken. Some of the experimental concepts can be applied and tested during the later phase of the Design Study. Designs of the experimental apparatus should be proposed, encompassing detection systems, readout electronics and DAQ.

These objectives were discussed and some of the synergies and overlaps with other tasks were highlighted. It was noted that NAO is involved in the Heavy Ion LINAC task and that MV is in the Yield Estimates task. As part of its remit, Task 10 has questions to answer from the management and NAO about the energy and time structure of beams.

- 2. Overview of Task 10:** RDP presented an overview of Task 10, highlighting the timescales involved. The following milestones were discussed:

Milestones	Expected result	Due
Select broad scientific goals	Working groups set up	July 2005
Identify best cases	Key experiments selected (workshop)	January 2006
Commence simulations	Specify apparatus	June 2007
Report Collation	Final report	April 2008

- 3. Review of FP5 Report:** A review of the EURISOL RTD Report funded under the 5th Framework was presented by PTG. This review covered the methodology adopted, the energy regimes covered and a summary of the physics areas addressed. A discussion followed about the physics driven philosophy of the task and understanding what was meant by key experiments. It was noted that Appendices A (Physics Case) and E (Instrumentation) were of particular relevance for the Task.
- 4. Introductions by Participants:** Each participant gave a brief summary of the interests and expertise of their groups. RDP summarized those of the participants who were unable to attend the meeting.
- 5. Formation of teams for sub-tasks:** Following a long discussion, several physics headings were agreed upon. Participants volunteered to take part in sub-tasks as they felt appropriate. Sub-task leaders were nominated. (NB in some cases the proposed leaders were not present and remain to be confirmed). It was recognised that the expertise of the participants did not span adequately all the physics areas to be covered. Additional people were therefore identified who would be approached to contribute by the relevant sub-task leaders, but this list should not be regarded as exhaustive. ***Other contributors, especially from those participants who were absent, are still welcome and encouraged to sign up – please email RDP so an up-to-date list can be kept.*** The following table summarizes the sub-tasks and their contributors. Leaders are in bold. The first 4 entries came under a general heading of “Nuclear structure”. Clearly suggestions are needed for contributors for the “complementary issues”. Some scepticism was expressed as to whether EURISOL would be better than FAIR for antiproton physics.

Action: Sub-task leaders are to inform RDP (rdp@ns.ph.liv.ac.uk) of planned meetings and changes in people working on their sub-task.

Topic	Participants
Limits of stability	BB, AB, PTG, MR, HM, RDP, KS, PMW, FN
Ground state properties	PMW
Single particle & collective properties	AB, HM, PMW, FN
Superheavy elements (chemistry, spectroscopy, production)	PTG, RDP, KS, MV
Phase transitions/nuclear reactions & dynamics	PC, AK, MV
Astrophysics	HM
Neutrino interactions	CV
Fundamental interactions	BB, Oscar Naviliat(?)
Complementary issues: Antiprotons, muons Solid state physics Medical & biological applications	AK(?)

- 6. EURISOL Week Physics Days:** The EURISOL Week will take place 28th November 2005 to 1st December 2005 at GANIL. It is envisaged that around 1 day of talks will be devoted to physics, spread over 28th – 29th November 2005. The programme is to be prepared by the Task participants.
Action: sub-task leaders should each nominate 2 speakers and notify RDP in time for the Coordination Board meeting in Liverpool on 8th July 2005, so a provisional programme can be presented. It was concluded that the Task participants could use EURISOL DS money to fund their travel expenses for the EURISOL week, but there was no money in the task's budget to provide support for invited speakers.
Action: RDP will ask the Management at the Coordination Board meeting if they can offer speakers financial support.
- 7. Trento Workshop:** RDP reported that he and AB had submitted a preliminary application to hold a workshop at Trento. The application had been received enthusiastically and we are invited to submit a full proposal including a programme and list of speakers. It was envisaged that the workshop would last 5 days and that the speakers would be predominantly theorists. The dates proposed for the workshop are 16th-21st January 2006, though this has to be confirmed.
Action: All participants are to provide RDP with suggestions for speakers. AB and RDP will prepare the full proposal.
- 8. Issues for EURISOL DS Management:**
Can the Management provide financial support for speakers at the EURISOL Week Physics Days?
- 9. Any Other Business:** It was agreed that a web page containing information pertinent to Task 10 should be set up, either on the EURISOL DS web page (www.eurisol.org) or with a link from it.
Action: RDP to set up web page.
- 10. Date and venue of Next Meeting:** The suggestion that sub-tasks could meet around the time of the EURISOL week was accepted, though venues for these would have to be found. It was also agreed that the next meeting of the Task participants would be on the final day of the Trento workshop.