ColMat

Welcome and Task 1

Ralph W. Aβmann

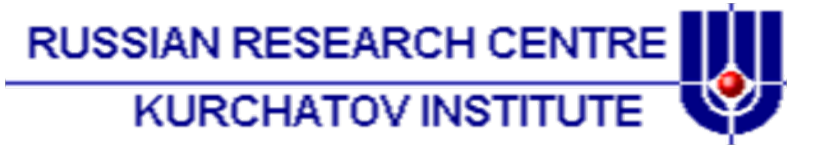
Kick off Meeting of EuCARD/ColMat

CERN – June 17th, 2009

ColMat Participants

(EuCARD WP8 – Joint Research Activity)

AUSTRIAN RESEARCH CENTERS



ColMat Collaborators

LHC Accelerator Research Program (US government funding):

SLAC NATIONAL ACCELERATOR LABORATORY

BROOKHAVEN NATIONAL LABORATORY

Fermilab

To be approved (German government funding, BMBF):

GOETHE UNIVERSITÄT FRANKFURT AM MAIN

TECHNISCHE UNIVERSITÄT DARMSTADT

Welcome

Welcome to all participants who have come to CERN or called in via telephone.

➔ round-table

Reminder

ColMat Objectives Part I

- Coordination and scheduling of the WP tasks.
- Monitoring the work, informing the project management and participants within the JRA.
- WP budget follow-up.
- Design **collimation systems for high-intensity proton and ion beams, adequate for achieving the performance goals of LHC and FAIR.**
- Predict energy deposition from different sources for LHC and FAIR.

Reminder

ColMat Objectives Part II

- Identify and fully characterize in experiment and simulation materials that are adequate for usage in high power accelerators.
- Predict residual dose rates for irradiated materials and their life expectancy due to accumulated radiation damage.
- Design, construct and test a collimator prototype for upgraded LHC performance.
- Design, construct and test one cryogenic collimator prototype for use in FAIR and possibly LHC.
- Develop crystal engineering solutions for collimation.

Milestones - Schedule

Mile-stone	Description/title	Nature	Delivery month	Comment
8.1.1	1st annual ColMat review meeting	O	M12	
8.1.2	2nd annual ColMat review meeting	O	M24	
8.1.3	3rd annual ColMat review meeting	O	M36	
8.1.4	Final ColMat review meeting	O	M48	
8.2.1	Functional specification LHC of beam loss and collimator design	R	M12	Simulations and design completed.
8.2.2	Upgrade LHC collimator specification	R, D	M24	Materials characterized and tested. Review of results and specification.
8.2.3	Functional specification FAIR of beam loss and collimator design	R	M12	Simulations and design completed.
8.3.1.1	LHC type collimator designed	R	M20	warm collimator
8.3.1.2	LHC type collimator constructed	P	M26	
8.3.1.3	LHC type collimator tested	R	M30	
8.3.2.1	FAIR type collimator designed	R	M24	cryogenic collimator
8.3.2.2	FAIR type collimator constructed	P	M36	

Deliverables - Schedule

Deliverables of tasks	Description/title	Nature	Delivery month
8.1.1	ColMat web-site linked to the technical and administrative databases	O	M48
8.1.2	Collimator specification for LHC upgrade parameters	R	M24
8.1.3	Collimator specification for FAIR	R	M24
8.2.1	Report on modelling and materials	R	M36
8.3.1	One primary collimator with optional crystal feature, tested with beam	P	M42
8.3.2	One cryogenic collimator, tested with beam	P	M30

Task Structure ColMat

Task 1 → **ColMat Coordination and Communication.**

R. Assmann & J. Stadlmann

Task 2 → **Modelling, Materials, Tests for Hadron Beams.**

A. Bertarelli

A) Halo studies and beam modeling
B) Energy deposition calculations & tests
C) Materials and thermal shock waves
D) Radiation damage

Task 3 → **Collimator Prototyping & Testing for Hadron Beams.**

P. Spiller
R. Assmann

A) Prototyping, laboratory tests and beam tests of room-temperature collimators (LHC type). Crystals.
B) Prototyping of cryogenic collimators (FAIR type).

Task 1

- Management should be kept to the minimum: I propose 1 formal meeting per year, as required by EU.
  - First meeting: today
  - Second meeting: May 2010!?
- Reporting should be kept to minimum. Propose yearly meetings as place to report. Form to be clarified.
- Propose to add EuCARD/ColMat acknowledgement to relevant papers, to qualify as deliverable.
- Now, to build a collaboration we need more contact.
  - We brought many of our collaborators today, so please get in touch.
  - We can organize regular phone conference meetings (once every 4 weeks?) to regularly exchange ideas and work progress (per WP, per task, per sub-task, …).
  - Visits and research stays.

Task 1

- Discussion…
- Questions…