

DRAFT Programme of NuFact08 Accelerator Working Group (draft v0.2 - 11-03-08)

Monday, 30th June 2008

Session 1: Phenomenology 15:00 - 17:00 (Chairperson:)

Time	Title	Speaker	Duration
15:00	g=350 Li/B betabeam	Fernandez-Martinez	00:25
15:25	Unraveling un parameters with a magical beta-beam at INO	Agarwalla	00:25
15:50	Combining CPT conjugate neutrino channels at Fermilab	Parke ?	00:25
16:15	Probing non standard neutrino physics at T2KK and Nufact	Nunokawa ?	00:25
16:40	Discussion Session		00:20

Session 2: Phenomenology 17:30-19:00 (Chairperson:)

Time	Title	Speaker	Duration
17:30	Prospects and synergies between future atm and LBL	Maltoni	00:25
17:55	Neutrino mass hierarchy and Majorana CP phases	Schwetz, Garayoa ?	00:25
18:20	Prospects to measure theta13 and mass hierarchy via a SN signal	Dighe, Mirizzi, Dasgupta	00:25
18:45	Discussion Session		00:30

Tuesday, 1st July 2008			
Session 3: Golden I- Joint with WG2 15:00-17:00 (Chairperson:)			
15:00	Results and lessons from MINOS oscillation analysis	Weber ?	00:25
15:25	Status of MIND: performance and prototyping	Laing ?	00:20
15:45	Status of T ASD	Bross ?	00:20
16:05	Impact of systematic uncertainties	Huber	00:20
16:25	x-section systematics and near detector for nufact		00:20
16:45	Discussion Session		00:20
Session 4: Golden II 17:30-19:00; (Chairperson:)			
17:30	Results and lessons from K2K-T2K oscillation analysis		00:25
17:55	Status of R&D for large WC and underground labs		00:20
18:15	x-section systematics and near detector for a WC		00:20
18:35	Discussion Session		00:25

Thursday, 3rd July 2008			
Session 5: Silver and Platinum 15:00-17:00 (Chairperson:)			
15:00	Charm production x-sections		00:20
15:20	Experience from OPERA	ask Declais	00:20
15:40	Can OPERA help in constraining neutrino NSI	Huber, Esteban-Pretel?	00:20
16:00	Design and Performance of ECC-MECC	Migliozzi?	00:20
16:20	Prospects of platinum	someone from NoVA	00:20
16:40	Discussion Session		00:20
Session 6: JOINT WITH WG3 : BETA BEAMS 17:30-19:30; (Chairperson:)			
17:30	An intermediate gamma beta-beam	Palomares-Ruiz, Melon	00:25
17:55	Optimizing the greefield betabeam	Winter, Choubey ?	00:25
18:20	Discussion Session and preparation for joint meeting		00:30
18:50	Discussion session with WG3 :		00:25
19:15	Session ends (NOTE THAT THIS SESSION IS PROPOSED TO BE EXTENDED BY 1/2 h)		00:00

Friday, 4th July 2008			
Session 7: JOINT WITH WG3 : Nufact optimization 15:00-17:00; (Chairperson:)			
15:00	Status of INO	ask Mondal	00:20
15:20	Liquid Argon R&D	Menary ?	00:20
15:40	Preparation for joint meeting with WG3		00:50
16:30	Discussion session with WG3 : From sessions 1-7: overall accelerator issues for NF		00:30
17:00	Session ends		00:00
Session 8: ACCELERATION + END TO END SIMULATION 17:30-19:00; (Chairperson:)			
17:30			00:20
17:50	Discussion		00:10
18:00			00:20
18:20	Discussion		00:10
18:30			00:30
19:00	Session ends		00:00

Monday, 30th June 2008

Session 1: PROTON DRIVER (PD) 15:00 - 17:00

(Chairperson: M. Zisman?)

Time	Title and Questions to be addressed by the speaker during the talk
15:00	NF PD: preferred scenarios & remaining issues
	a- Present latest ISS/IDS beam parameters and scenarios
	b- Problems with reaching 1ns rms bunches?
	c- Issues with 1 bunch scenario ?
	d- All other issues for the different scenarios ?
	e- Present overall table showing the pros and cons of each scenarios
	f- Work plan + tests/experiments needed?
15:20	Discussion
15:30	Baseline scenario for SB PD, challenges and synergies with other programmes
	a- Present latest beam parameters and scenarios
	b- Explain major challenges and possible trade-offs?
	c- What are the synergies with NF and MC programmes?
15:50	Discussion
16:00	Baseline scenario for MC PD, challenges and synergies with other programmes
	a- Present latest beam parameters and scenarios
	b- Explain major challenges and possible trade-offs?
	c- What are the synergies with NF and MC programmes?
16:20	Discussion
16:30	Discussion session: Updates on the PD baseline specification (if any) and endorsement
Session 2: CAPTURE 17:30-19:00	
(Chairperson:)	
Time	Title and Questions to be addressed by the speaker during the talk
17:30	Horn vs. solenoid options for NF?
	Can we discard the horn option?
	Do we need and are we ready to launch R&D for NF target solenoid?
17:50	Discussion
18:00	Challenges and progress on the SB horn design
	work status - simulation - what experimental results are needed?
18:20	Discussion
18:30	Discussion session: Updates on the capture scheme specification (if any) and endorsement

19:00 **Session ends**

Tuesday, 1st July 2008	
Session 3: JOINT WITH WG4 : FRONT END 15:00-17:00 (Chairperson:)	
15:00	Pro and cons of existing cooling schemes?
	Review of schemes ending with Pros&Cons table for each scheme
	Recommendation on which NF cooling scheme should be used
	Recommendation on which absorber material should be used
15:20	Discussion
15:30	Experimental tests of cooling: expected results and what else should be done?
	Other experimental tests needed?
	If so, can they be part of MICE programme? or are additional efforts needed?
15:50	Discussion
16:00	RF issues for muon ionisation cooling channels
	What experiments are needed to understand and mitigate breakdown at 201 MHz for NC cavities?
	What is the limiting gradient at 201 MHz with magnetic field
	Do we need more 805 MHz experiments and if so, what should they be?
	With what precision can we measure the absolute voltage in each cavity (either with or without beam)
16:20	Discussion
16:30	JOINT Discussion session with WG4: Updates on the front end specification (if any) and endorsement
	The following topics will be treated as part of the scheduled talks of session 3 (+posters) and can be debated.
	beam line design work (cooling) by Muons Inc., Roland Johnson, Fermilab/Muons Inc.
	beam line design using phase rotation at JPARC, M. Aoki, Osaka
17:00	Session ends
Session 4: JOINT WITH WG4 : MUON STORAGE RING 17:30-19:00; (Chairperson:)	
17:30	What are the remaining issues/difficulties/trade-offs for NF Muon storage ring?
	Do we need to inject both signs in one ring?
	If so, is the lattice compatible?
	Do we need to accommodate 20-50 GeV or will fixed energy suffice?
	What are the effects of errors? (strength, multipole, alignment...)
17:50	Discussion
18:00	Can we share a muon source among NF, MC and low energy muon programme?
18:20	Discussion
18:30	Discussion session with WG4: Updates on the decay ring specification (if any) and endorsement
	issues of sharing the muon source among neutrino factory, muon collider, low energy muon program
19:00	Session ends

Thursday, 3rd July 2008	
Session 5: TARGET 15:00-17:00 (Chairperson: H. Kirk ?)	
15:00	Particle production vs. energy: how do simulation results match experimental measurements?
	Synthesis of particle production vs. energy for different materials and codes
	How do simulation results match experimental data (MERIT + HARP + others)?
15:20	Discussion
15:30	Can solid target vs.. liquid target survive SB and/or NF proton beam structure at 2-4 MW?
	What simulation results show? Can they be trusted? What safety factors are taken?
	What are the risks / unknowns ?
	What operating targets can teach us? (K2K, NuMI, CNGS...)
	What experimental set-up results say? (all labs results)
15:50	Discussion
16:00	What additional experimental results are needed to make a choice of SB and NF target?
	What are the key questions to answer?
	What must be measured? How? With which precision? When? For how long? Budget estimate?
16:20	Discussion
16:30	Discussion session: Updates on the target specification (if any) and endorsement
17:00	Session ends
Session 6: JOINT WITH WG1 : BETA BEAMS 17:30-19:30; (Chairperson: M. Lindroos)	
17:30	RCS design
	Can we pin down parameters, such as energy and intensity?
17:45	Discussion
17:50	Decay ring status / studies
18:05	Discussion
18:10	High frequency ECR source (60 GHz) in pre-glow mode for bunching of beta-beam isotopes
18:25	Discussion
18:30	Direct production of ^8Li and ^6He using neutrons from low energy Deutrons
18:45	Discussion
18:50	R&D challenges in FP7
19:05	Discussion session with WG1:
	Can we achieve $g=350$ with LHC upgrades ?
	What storage ring for $g=350$, taking into account relaxed duty cycle ?
	Activation of PS, SPS, storage ring ?
	Production of ions: status of Rubbia's proposal, Li/B vs. He/Ne
19:30	Session ends

Friday, 4th July 2008

Session 7: **JOINT WITH WG1: Experiences with operating beams for Neutrino experiments 15:00-17:00;** (Chairperson: **E. Gschwendtner**)

15:00	Horn operational experience in K2K, NuMI and CNGS
	Any breakdowns? Which ones? When? Why? Under which beam conditions (p.o.t? Power? Beam structure?)
	Solutions? Implemented? Did it work?
	Lessons for the next beam generations?
15:20	Discussion
15:30	Radiation Protection lessons
	Any problems? Where? When? Why?
	Understood by modeling? Simulations?
	Solutions? Implemented? Did it work?
	Lessons for the next beam generations?
15:50	Discussion
16:00	Beam diagnostics requirements and experiences from operating facilities
	Beam precision at target?
	How difficult to fulfill?
	How to monitor?
	Used of continuous feedback?
	Lessons for the next beam generations?
16:20	Discussion
16:30	Discussion session with WG1: From sessions 1-7: overall accelerator issues for NF
	List of main points and decisions. Proposal on next steps
	Low versus High nu fact: physics, detector, accelerator issues.
17:00	Session ends
Session 8: ACCELERATION + END TO END SIMULATION 17:30-19:00; (Chairperson:)	
17:30	Pro and cons of existing acceleration scheme?
	How do the different scenarios compare?
	Can we accept or reject the non-scaling FFAG concept?
	What are the matching requirements between the various accelerators? Efficiency of each section?
	What is responsible for the Q slope in the 201 MHz SRF case?
	Can it be avoided by improved fabrication techniques?
17:50	Discussion
18:00	Status of END to END simulation
	What matching sections are designed?
	What remains to be designed?
18:20	Discussion
18:30	Discussion session: Updates on the acceleration scheme specification (if any) and endorsement

19:00 **Session ends**

List of subjects for poster + paper contributions for SB, BB, NF

Categories	Title	Authors
Proton Driver		
	SPL accumulator and compressor scenarios for NF	M. Aiba
Target		
Decay and Capture		
Front-End		
	beamline design work (cooling) by Muons Inc.	Roland Johnson, Fermilab/Muons Inc.
	beamline design using phase rotation at JPARC	M. Aoki, Osaka
Acceleration		
Decay ring		
END-to-End simulation		
Beta beam topics		
Others	muon collider developments	Steve Geer, Fermilab
	Project X at Fermilab	D. McGuinness?, S. Geer, Eric Prebys, or C. Ankenbrandt
	low energy muons beams at JPARC	
	low energy muons beams at RAL	