

CesrTA Machine Studies Task Overview

I. Experiment Description

Experimental Topic	Electron Cloud Tune Shift Studies	
Classification¹	EC	
Coordinator/ Experimenters	MAP?	DLK,MGB,MCR,GAR,MGS
Primary Goals	Characterize EC buildup for various beam energies, bunch currents, bunch spacings.	
Description²	<p>2.1, 4.0, and 5.3 GeV positron and electron beams. 14-ns spacing.</p> <p>45 bunches, bunch currents .25, .50, .75, 1.0 mA at each energy</p> <p>Pinged beams, single-bunch excitation data interspersed. (Pinged beams e+ and e- sufficiently explored at 2.1 GeV already.)</p> <p>Various bunch spacings 4, 8, 12, 14, 16, 20, 28 ns at 2.1 GeV.</p> <p>Some time it would be valuable to explore witness bunches, which have been neglected lately.</p>	
Special Needs/Requests	Ramirez' bunch excitation program interfaced with Rendina's BPM readout system to optimize data taking procedures.	
Prerequisites³	Personnel	Description
2.1, 4.0, 5.3 GeV e+/e- injection	?	
Single-bunch excit'n	MGB, GAR	Understand Dec.2011 failures
CBPM	NR, MCR	Repair bunch spacing performance
Time Requested⁴	No. Shifts	Principal Tasks
16 hrs (e+) + 16 hrs (e-)	4	

¹ Machine Studies Classifications:

- EC – Electron Cloud
- LET – Optics Correction and Low Emittance Tuning
- IBS – Intra-beam scattering studies
- xBSM – x-ray Beam Size Monitor
- INST – Instrumentation (BPM development, RFA development, other)
- MDEV – Machine Development (includes injection configuration, injection tuning, custom orbit setup, instrumentation preparation, etc.)
- MREC – Machine Startup (recovering conditions after down period or access)

² Attach additional pages for experimental description if needed

³ Indicate other machine work that is required in preparation for this machine studies experiment.

⁴ Indicate the principal shift topics and estimated number of shifts required

II. Machine Studies Assignments

Reserved for Project Management Team Use		
Topic ID		
Priority ⁵		
Shift Assignments	Date	Shift

⁵ Priority Scale:

1. Critical – results are necessary for preparation for subsequent down/run periods
2. Very high – results are strongly desired for achieving program milestones or in preparation for subsequent down/run periods
3. High – results are of immediate interest but not require
4. Moderate – results should be pursued at the first convenient opportunity
5. Low – results are not presently a high priority for either project milestones or planning

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