CesrTA Machine Studies Task Overview

I. Experiment Description

Experimental Topic	BPM tilt calibration	
Classification[*]	LET	
Coordinator/ Experimenters	JSh	DLR, JSh
Primary Goals	In a well-corrected machine, measure betatron coupling to fit BPM tilts	

Description[†]	Electrons and positrons 2.085GeV
	• Correct orbit, phase/coupling to achieve well-decoupled beam (flat orbit)
	• Measure:
	  ○ Phase/coupling
	  ○ Dispersion (AC and DC)
	• Repeat measurements for other drive amplitudes
	• Repeat with electrons
	• Fit BPM tilts
	• Use fitted BPM tilts to analyze dispersion data
	• Repeat at two other energies (1.8GeV or 2.3GeV; 3-5GeV)	

Special Needs/Requests		
Prerequisites[‡]	**Personnel**	**Description**
BPM gain calibration	MR,MS, DLR, JSh	Calibrate BPM gains, just prior to this experiment
Time Requested[§]	**No. Shifts**	**Principal Tasks**
2x2 hr	2	Take measurements on two days, at 2.085GeV
2x2hr	2	One two-hour shift at two different energies (2.3GeV? 4GeV?)

[*] 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)

[†] Attach additional pages for experimental description if needed

[‡] Indicate other machine work that is required in preparation for this machine studies experiment.

[§] Indicate the principal shift topics and estimated number of shifts required

II. Machine Studies Assignments

Reserved for Project Management Team Use		
Topic ID		
Priority[**]		
Shift Assignments	**Date**	**Shift**

[**] 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