

CesrTA Machine Studies Task Overview

I. Experiment Description

Experimental Topic	Low-current beam size characterization	
Classification *	LET / IBS	
Coordinator/ Experimenters	JSh, MGB	JSh, MGB
Primary Goals	Characterize low-current beam size behavior in 2.1 GeV conditions	
Description [†]	In either electron or positron conditions (whichever xBSM line is available): <ul style="list-style-type: none"> • Vary chromaticities, measure beam size • Landau damping vs. chromatic damping <ul style="list-style-type: none"> • Turn on octupole, observe width of $\sigma_y(I)$ band at low I (< 1mA) • Coherent damping vs. octupole strength, varying I (< 1mA) <ul style="list-style-type: none"> ▪ Drive-damp studies 	
Special Needs/Requests		
Prerequisites [‡]	Personnel	Description
xBSM functional	NTR	xBSM must be functional for this experiment (C- or D-line)
Time Requested [§]	No. Shifts	Principal Tasks
6hr	1	Items listed above.

* 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