Index Panel

SLC Control program

INDEX

SLAC's Software Engineering Newsletter

Jan. 25, 1990 | All that Fits is News to Print | Vol. 4, No. 4

Modifications to the Scavenger Energy Loop

January 18, 1990

Author: *Uzi Arkidir, Tom Himel* **Subsystem:** *Feedback* **User Impact:** *Small*
Panel Changes: *One* **Documents:** *No* **Help File:** *No*

In the past, the scavenger energy feedback loop did not really control the energy of the scavenger beam. Rather it used a multiknob to adjust the magnets of the extraction line to match the measured energy. To avoid some problems caused by the hysteresis in these magnets and also to prepare for a future implementation of fast feedback, the scavenger energy loop has been changed so that it now controls the phase shifters of the Sectors 17 and 18 sub-boosters.

To allow manual control of the energy, a new multi-knob called SCAVPHAS has been made. This should be used for manual adjustments of the energy instead of the old FDBKSCAV multi-knob. On the e+ tuneup panel there is a button [LI17 LI18 PHAS] which gets this new multi-knob.

Final Focus Tuning Changes

January 20, 1990

Author: *Nan Phinney* **Subsystem:** *Final Focus* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

Minor changes have been made to the Final Focus tuning setup.

Dispersion measurements now default to using the energy as measured by the Chromatic Correction Section BPMs for analysis. These are the PHYS FF11ENGY and FF01ENGY variables. The user may still toggle the Analysis Type button to select the Energy as measured by Fast Feedback if that is desired.

Sextupole scans are now available from the Final Focus Beam and Wire Scan panels. They are selected by toggling the Select Scan Type button to SEXT. These scans use the multiknobs NX_CHROM, NY_CHROM, SX_CHROM and SY_CHROM created by Patrick Krejcik. The scans will have more sensitivity with an Off-Energy beam, but this must be setup by the user and is not automatic. The unused Z_AVERAG and Z_DIFF scans have been removed as an option.

The CALC WAIST FITS display format has been changed to enhance readability. Emittance is now given in meter-radians and Beta star in millimeters. For deflection scans, the effective Emittance and Beta star

are calculated assuming equal size beams. The angular divergence, Cap sigma waist, emittance, and Beta star parameters are now stored in the database and available in the history plots.

The AUTO COLLIDE procedure has been modified to ensure that the deflection fit parameters are only updated in the database for fits which pass all reasonability checks. This is to protect the IP position fast feedback which uses these parameters.

In addition, many of the annoying error messages from the VARPRO and Gaussian fitting packages have been suppressed.

BPM Special Displays

January 23, 1990

Author: *Linda Hendrickson* **Subsystem:** *BPMO* **User Impact:** *Small*
Panel Changes: *No* **Documents:** *No* **Help File:** *Yes*

A new BPM special display has been added to display the difference between extracted electrons and scavenger electrons in the LINAC. For DR12 through LI19, the display outputs the X and Y orbit differences for scavenger minus electrons. The TMIT displayed is the ratio of scavenger over electron intensities. This display is accessed by selecting the [SETUP SPECL DISPLY] button from the BPM measurement panel. The user must enter the display mnemonic LINACD.

For the DIFF special display, the logic has been modified to be consistent with the LINACD display so that instead of displaying the TMIT difference as previously, the new software displays the ratio of the TMITs. The TMIT ratio displayed is scaled according to the value from the [MAX TMIT COEFF] button.

BPM Calibration Conflicts

January 24, 1990

Author: *Linda Hendrickson* **Subsystem:** *BPMO* **User Impact:** *Small*
Panel Changes: *No* **Documents:** *No* **Help File:** *No*

Several months ago, BPM software in the SCP and in other VAX processes was modified to handle conflicts between BPM calibration and measurement more gracefully than before. When a micro is busy calibrating BPMs for another user, it is not able to measure BPM data until the calibration is finished. Therefore, when measuring BPM data, the VAX software determines if a calibration is in progress and tries again repeatedly until the calibration is complete or the allowed wait time is exceeded. In general, applications which measure BPM data now perform correctly even if a calibration conflict occurs.

Recently, the BPM software on the micro was modified to remove the error message indicating that calibration is in progress, since it was often misinterpreted by users.