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SLC Control Program

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Camac Crate Temperatures

March 16, 1989

Author: *Nancy Spencer* **Subsystem:** *Accelerator* **User Impact:** *Small*
Panel Changes: *None yet* **Documents:** *No* **Help File:** *No*

The CAMAC crate temperatures are now being put into the database every time one verifies a crate (crates are routinely verified every 11 minutes). The crate temperatues can be accessed by

CSTR,micro,1,CRTT

where CRTT is an array containing the temperatures for all crates for the specified micro. History buffer plots of the temperatures will be available soon.

Analog Status Ignore Tolerance Check

March 17, 1989

Author: *Nancy Spencer* **Subsystem:** *Acclerator* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

A feature has been added to the Analog Status System whereby the tolerance check for a particular channel can be ignored. It is intended that this feature be used in the near future for ignoring the status of temperatures associated with a klystron that is off.

Channels, whose tolerance check is being ignored, will be displayed in cyan and the letter I (for Ignore) will be appended to the value in the same way as T or R are appended for channels that are out of tolerance or have RMS problems.

BETA_PHASE Multiknob Fixed

March 19, 1989

Author: *Nan Phinney* **Subsystem:** *Linac* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *None* **Help File:** *None*

There is a special multiknob called BETA_PHAS which changes all the quad LGPSs in sectors 5-29. This knob is used to slowly change the total phase advance in the LINAC to allow one to see beta beats changing the size of spots in sector 30. This knob had quit working due to code rot. It is now working again.

Veto Status on BPM Display

March 19, 1989

Author: *Tom Himel* **Subsystem:** *BPM* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

The status of the veto system (e.g. ENABLED) is now displayed in the lower left corner of the BPM graphic display. It used to be in the upper right corner where it was overwritten by the title when difference orbits were being plotted. This solves Cater #6827.

Bug Fix to Lattice Diagnostic

March 19, 1989

Author: *Tom Himel* **Subsystem:** *Steering* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

The Lattice diagnostic program is a part of the steering package. It fits a model betatron oscillation to BPM data. The amplitude of the fit is displayed in the upper left corner of the display. When data was taken for positrons, there was a bug which caused this displayed amplitude to be wrong by about 30 orders of magnitude. The fit itself was OK. This bug has now been killed.

New Model Magnet Scaling Code

March 21, 1989

Author: *Mark Woodley* **Subsystem:** *Modeling* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

New software has been released which performs Model magnet scaling ("BDES-to-KMOD") for NLTR, NRTL, SLTR, and SRTL. The basic change released in this version of the software is that the computation of LGPS setpoints is now independent of what type of polynomials the LGPSs have. In addition, B values will not be computed for offline devices, while KMOD values for offline devices will be set to zero. When one or more devices is offline, the user will be informed and given the opportunity to abort the procedure.

Changes in Model OPTICS

March 21, 1989

Author: *Mark Woodley* **Subsystem:** *Modeling* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

Database Twiss parameter files which are created when the [PUT TWISS IN DB] button on the Model OPTICS panel is pressed will now reside in a new directory which may be referred to using the logical name SLCMODLDB. All software which reads or writes these files has been modified accordingly. In addition, the files written by SCPs which contain computation requests for COMFORT are now written into the SLCMODLSCR directory.

Other changes to be seen in the world of Model OPTICS are improved sorting and paging for the Twiss log display, use of the PRINT_DEV queue for printing of scratch output and echo files, and the addition of the names of the first and last selected Model regions in the "ARE YOU SURE??" prompt when putting Twiss parameters into the Database.

LEM II

March 21, 1989

Author: *Mark Woodley* **Subsystem:** LEM **User Impact:** *Small*
Panel Changes: *None* **Documents:** *Available* **Help File:** *None*

A new algorithm for the computation and application of the LEM *fudge* factor has been released. This new algorithm treats positive energy gains from "forward phased" klystrons differently than negative energy gains from "backphased" klystrons. LEM computations in the absence of "backphased" klystrons will be identical to the present computations ... this new algorithm will primarily effect SPEAR beams which originate in the Damping Rings and which have many "backphased" klystrons. For those who are interested, a brief writeup which compares and contrasts the new and old LEM algorithms is available from Mark Woodley.

A new algorithm for computing the two-sector energy *kinks* used by LEM to adjust the beam energy is also included in this release. This new algorithm should allow more dynamic range for energy adjustments requested via the [CHECK/ ADJUST ENERGY] button on the LEM panel.

Finally, the default LEM display type has been changed to EACT.

Feedback Throughput Increase

March 21, 1989

Author: *Steve Moore* **Subsystem:** *SLC* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

A change was made to the Database Facility to inhibit certain types of extraneous messages from being sent to the virtual micros. This should increase throughput in the Feedback process.

Safety Prompt for ARC MAINS

March 22, 1989

Author: *Miguel Flores* **Subsystem:** *ARC* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

A "Do you really want to ..." safety prompt has been add to the ARC MAINS ON and OFF functions. Answer No or just a return, and no action is taken. Answer Yes and the desired function will be executed. This new feature will help protect against costly accidental button pushes.

Model Data to File Enhancement

March 22, 1989

Author: *Anthony Szumilo* **Subsystem:** *Plot & Data Options* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

1. In the Plot & Data Options panel, the "write data to disk" button now performs some additional functions. In the past, the BPM, COR and QUAD data were written to the file specified. Now, the LGPS, QTRM, BTRM, SEXT, SEPT, LENS, SOLN, SMPS, BEND, XMOV and YMOV primaries have been added to the list of what's written out. All entries are separated by a dashed line. Only the primaries appropriate to the current display group are written out (others are just ignored).

2. The only exception to this is the QUAD magnet data. A title is always written out for the QUAD data, even if no data is available. A diagnostic message is also included which tells whether or not

the program could get information on the quadrupoles' energy values. (If there are no QUADs in the display group, that message will be followed immediately by the dashed-line separator.)

3. There was also a bug fix: there were cases where the data could not be written out because of internal format errors. This error caused the write-to-disk to be aborted. This has been fixed so that any such problems replace the offending data with either 999.99 or -99.99 (for overflow positive and negative, respectively). If an error still occurs, only the line with that data is aborted, and the write to disk continues with the next line.

4. As before, the operator is notified of the success or failure of the write to disk operation.

Safe and Sane Modelling

March 23, 1989

Author: *Tom Himel* **Subsystem:** *Modelling* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

One of the most common errors made when running the model is that people don't model the whole region. Stopping in the middle of a region (e.g. at LI30) leaves a discontinuity in the TWISS parameters which makes steering, feedback and emittance measurements misbehave. To help prevent this, when you make this error and save the TWISS parameters to the database, a new error message will tell you that you have done something wrong and give you a chance to not save the TWISS parameters.

We have also changed the default for the running of COMFORT to make it use the COMPILED SKELETON DECK. This makes COMFORT run nine times faster but doesn't produce an ECHO file which people sometimes print. If you want this file, then you can toggle off this option.