

Array Analysis Setup

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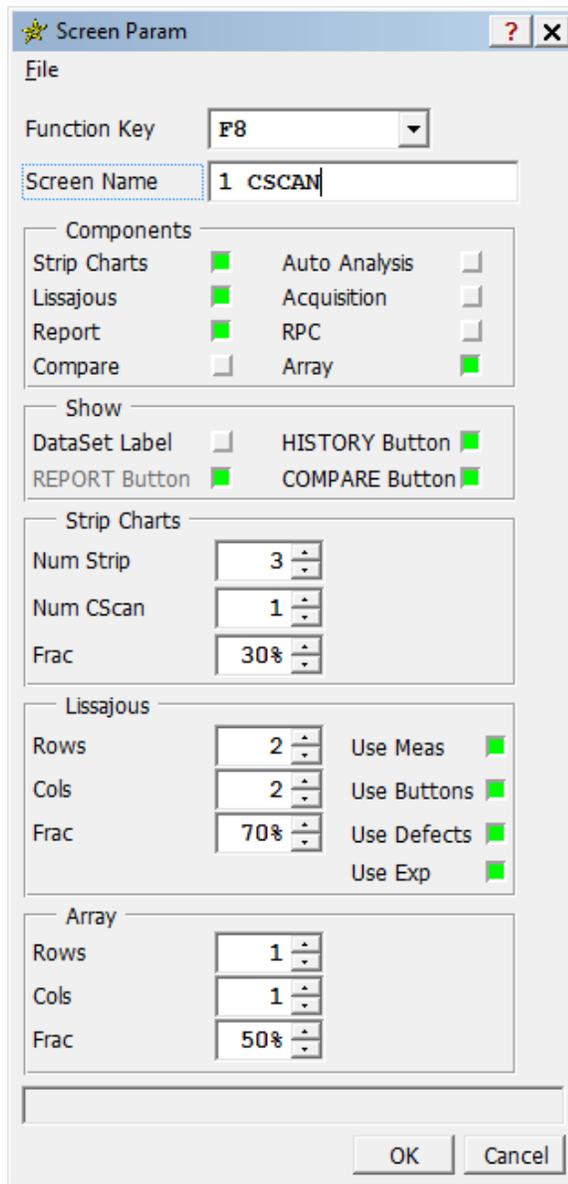


Purpose

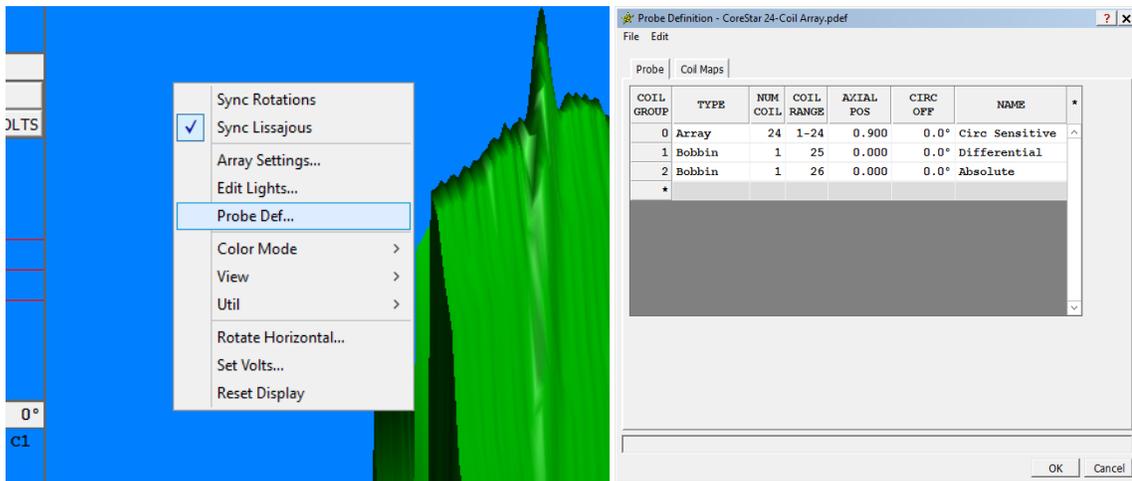
To describe the basic analysis setup of array probe data in CoreStar EddyVision software.

Procedure

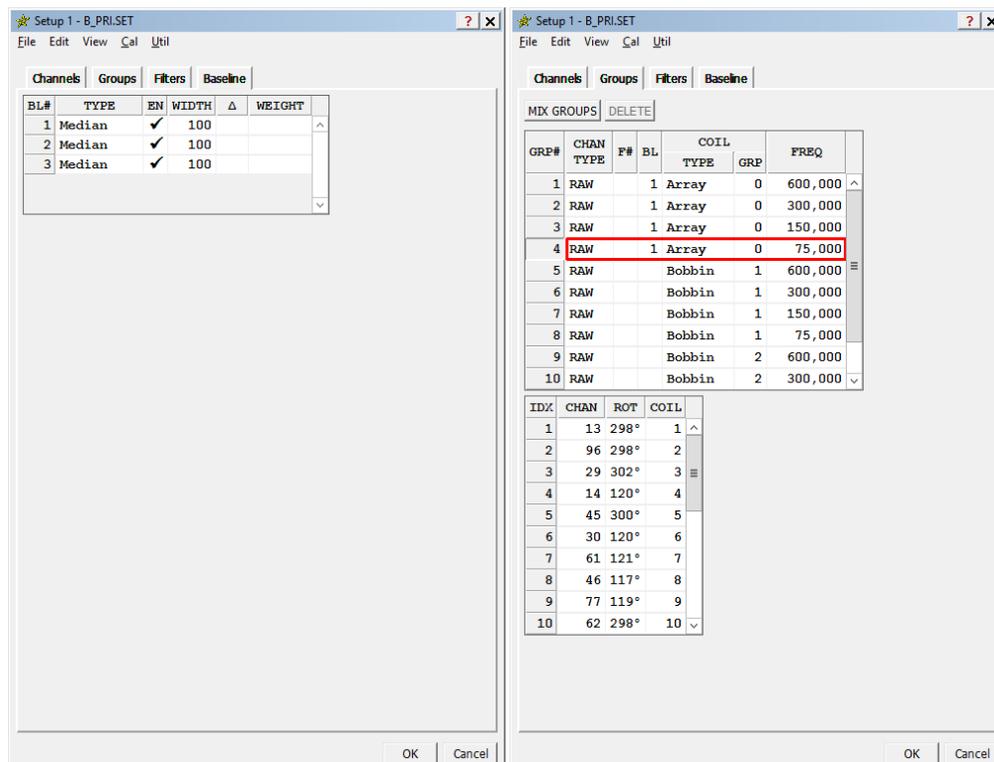
1. Collect data using proper configuration for desired array probe. Ensure coil mapping is proper for desired array probe.
2. Setup screen (**Edit > Screens**) for the desired number of CSCANS. See figure below for example with one CSCAN, 3 strip charts, and 4 lissajous.



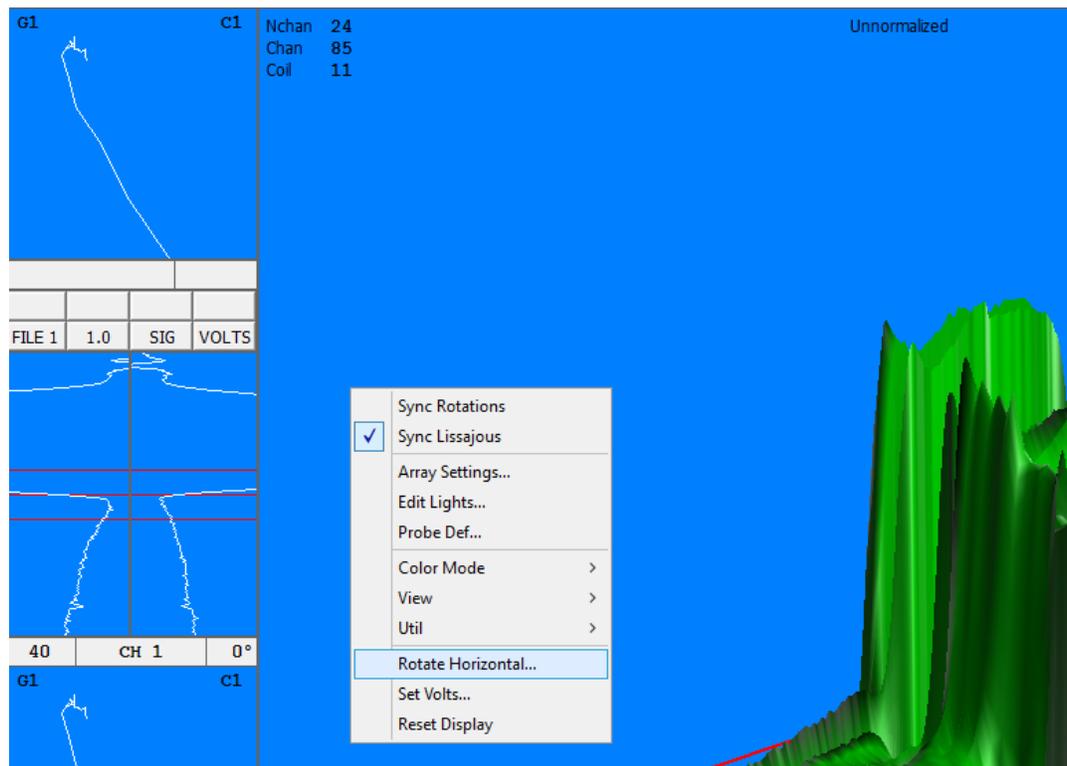
3. In the CSCAN plot window, right click outside of the CSCAN to popup menu. Select **Probe Def...** From the probe definition window, open the desired probe def file and select OK and reload desired data file. **NOTE:** DirectX 11.0 or greater must be installed to view array data.



4. Enable desired baseline filter from **SETUP**.
 - a. Select baseline tab and define up to three different filters. In most applications, the default 100 point median filter works best. The default baseline filter works well for tubesheet array wand inspections.
 - b. In the groups tab, click beneath the BL column to designate the desired baseline filter number for each array group.



5. Rotate each group by one of the following methods:
 - a. CTRL plus left click in upper left lissajous corner to rotate all coils within a group to the same phase angle.
 - b. SHIFT plus left click in upper left lissajous corner to rotate individual coils within a group. Clicking on the Cxx just below the rotation number will change coils within a group.
 - c. Using an expansion, center on the leading edge, right click in the CSCAN window and select rotate horizontal.



6. Right click in CSCAN window and select array settings. From the array settings window, select the desired color palette and max value. The max value will be the normalized voltage in the next step. Refer to tooltips for additional help.
7. Center cursor on the 30% OD groove, right click in CSCAN window, and select set volts. This will perform a normalization of all coils to the max value specified in array settings. **NOTE:** The response must have a phase angle that is in the flaw plane. Using a frequency that is too high often results in a phase greater than 165 degrees on the 30% OD groove.
8. Return to the array settings window and lower the max volts setting to a value where small defects can be seen from the strip CSCAN. Save setup and proceed to bobbin setup.

9. Refer to tooltip for additional help. Below is a list of tips for completing an array setup with bobbin data:
 - a. Slewing bobbin data can be accomplished from an array screen by disabling the **Sync Lissajous** option, clicking to the desired differential/absolute coil, and performing a SHIFT plus middle button and drag in the expanded strip chart. Save setup and re-enable sync lissajous upon completion.
 - b. Array mixing can be done by centering cursor on support, opening setup, clicking on groups tab, holding CTRL/select groups to mix, and click MIX GROUPS.
 - c. Right clicking in the strip CSCAN will adjust the CSCAN display length.
 - d. CTRL plus wheel while cursor is directly on CSCAN display will adjust ZSCALE factor.
 - e. Curves can be added to each coil within a group by building a curve on one coil and selecting the propagate button. The guess angle (Vga) can be used by performing a middle click and drag in the lissajous window. Vga is useful in the case where a desired coil does not detect a curve cal point that another coil is detecting.