

Abstract Submitted
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Precision calibration of a laser displacement sensor BRADLEY IRVIN, University of Kentucky — Surface current coils with extremely precise magnetic fields can be designed using the magnetic scalar potential. These coils are constructed as curved 3-dimensional printed circuit boards with traces flowing along the equipotential contours. We are preparing to manufacture such coils using a high speed precision spindle controlled by a Staubli RX130 6 axis robotic arm. A laser displacement sensor is used to calibrate the robot and to determine the position of the circuit board substrate for accurate construction. In this poster, we describe a procedure to calibrate the laser displacement sensor to an accuracy of a few microns using linear least squares fits to the position of two coupled linear stages.

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