

The Details of Senis Hall Probe Calibration Limitations¹

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The new Senis Hall probe {Rev. Sci. Instrum. 84, 025004 (2013)} used for insertion device (ID) magnetic characterization has clear advantages over the commonly used Sentron probe. One of these advantages is related to the cancellation of the Planar Hall effect and enables more accurate measurement of IDs with comparable vertical and horizontal fields. Another advantage is stable zero offset. Both of these Hall probes are used now at the APS ID magnet measurement facility, and the Sentron probe is a quite acceptable option for measurement of the majority of APS IDs with a strong vertical field and weak horizontal field, whereas the Senis probe is mainly used to characterize helical-type IDs. It is important to have a good cross-reference between different types of Hall probes and therefore comparative measurements of first field integrals have been performed. These results also provide an answer on the limits of accuracy for both probes.

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