

Instruments and methods for magnetic measurements

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The information is available at

<http://mypage.bluewin.ch/hera/magnet>

Magnetic Measurements of Particle Accelerator Magnets

Electromagnets used as beam guiding elements in particle accelerators and storage rings require very tight tolerances on their magnetic fields along the particle path. Also large volumes of magnetic field in modern spectrometer magnets must be mapped in order to allow for tracking of secondary particles. These pages contain information about methods and equipment used for these types of magnetic measurements.

Magnet Measurement Workshop

First of all I shall mention the International Magnet Measurement Workshop (IMMW). This meeting on magnetic measurement techniques is aiming mainly at particle accelerator applications. The Workshop was held a total of eleven times at two-year intervals, alternating between Europe and the US. It is a rather informal meeting, which brings together 60-80 people. The dates and locations are listed and a few photographs from these events are shown.

CERN Accelerator School

The CERN Accelerator School (CAS) organized two specialized courses on "Measurement and Alignment of Accelerator and Detector Magnets". The first was held in Montreux, Switzerland, 16-20 March 1992. The following in Anacapri, Italy, 11-17 April 1997. The CAS-Proceedings are available on the Web in CERN 92-05 and CERN 98-05

Manufacturers

A list of manufacturers of magnet measurement equipment was compiled. Homepage addresses and products are indicated. Again, this list is far from being complete. Examining the market carefully before launching the design of a complex measurement system may save much effort and cost. I would like to underline that many components are readily available from industry.

Bibliography

During many years, articles on magnetic measurements in the field of Particle Accelerators and Particle Physics Detectors were collected. This list of publications (bibliography) is in no way complete. It contains more than 400 references, which are of particular interest. Keywords were added in order to facilitate search for specific subjects. Only published papers are listed. Internal notes etc. have been omitted. It is perhaps the ancient part of the list, which is the most interesting. Nowadays, most libraries have very efficient means of searching for literature, so I did not extend the bibliography beyond 1998. Several suitable databases can be found, for example the CERN Library Catalogue. And much information can be found by searching the Internet. It should be mentioned that quite a few of the more recent publications in the list might be found and downloaded in full text from the CERN Library service. The last entry in my bibliography, "Magnetic Field Measurements in Beam Guiding Magnets", contains a general survey of the most commonly used measurement methods in particle physics applications. This preprint can be downloaded. (7 pages, size: 153 KB).

Concluding remarks

The main purpose of these pages was to create a forum for the exchange of information in the field. So, if you have created similar websites, please let me know, so that I can quote these. Please send your comments and suggestions to

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And please feel free to add a link to

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