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FIDUCIALIZATION PRECISION OF MECHANICAL METHOD

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Vibrating wire technique is mainly used in NSLS-II project to fulfil the alignment specification of ± 30 micron to 6 or 7 main magnets in each girder assembly. The center of magnet can be characterized with an accuracy of better than 10 micron.

The magnets have been fiducialized mechanically so that they can be coarsely aligned on girder within 100 micron accuracy. Although vibrating wire technique makes the fiducialization process less important, each magnet has been precisely surveyed mechanically.

By comparing the mechanical center deviation of magnets when they are aligned with respect to each other by vibrating wire technique, the fiducialization precision of mechanical method can be estimated. This information is useful for the accelerators which adopt the method of fiducialization mechanically.

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