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Developing an iris diaphragm laser alignment system for SPring-8 storage ring magnets

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The magnets on a common girder of SPring-8 storage ring have a critical alignment tolerance, for them we have developed a laser CCD-camera system in 1995. With it the magnets were aligned with accuracy of 20um. As the system become old to use we need to replace it with a new one. For the more, the SPring-8 II in the planning requires magnet centers to be aligned within 20um because of strong field of magnets. That, except for other error sources, demands the alignment system having accuracy of several micrometers.
An iris diaphragm laser alignment system is proposed and under developing. This paper will illustrate the system consideration, element testing, and primary results of this system.

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