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Diamond – II Girder Design

This talk reported on the current status of the D-II girder project. Diamond are currently about to begin pre-prototype testing, which is the testing of modified D-I girders. Diamond aim to order a D-II prototype girder in April 2021.
The D-II girders are 8m long and will likely use manual adjusters with visco-elastic damping pads similar to NSLS-II. Diamond are aiming for a stiff girder with compliant supports to achieve high stability.

Diamond using pre-protype testing to assess the adjustment system and different girder materials such as Steel, Grey Cast Iron and Carbon Composites.

Diamond are also in the process of identifying and reducing additional sources of vibration such as water flow induced vibrations.

Diamond – II Alignment and Ground Motion

This talk covered considerations for manual girder alignment and an early analysis of the storage ring floor.

When aligning an over-constrained girder, consideration must be given to the girder profile which requires many survey measurements. Diamond intend to define a process for this using the pre-protype test girders.

The greatest concerns with a manually adjustable girder system are the long term motions of the floor and the settlement following installation of a new machine. It was shown that for a new floor with settlement, the NSLS-II manual system has not required realignment. The Diamond floor appears to perform similarly to this floor.