

Petra IV Alignment Overview

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PETRA IV requires stringent alignment accuracies for close to 300 girders and over 3000 magnets, despite pervasive space constraints. This paper summarizes the alignment progress of the project's current prototype (pre-project) phase, as well as future plans. Under development are two novel multipole magnet referencing concepts photogrammetric and laser tracker measurements. Each concept utilizing laser optical micrometers on a vertical rotary stage axially traversed by a vibrating wire. Also Custom stable floor-mounted instrument pillars are under prototype-phase development. These will be applied to multiple alignment and magnet fiducialization work stations for PETRA IV.

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