Analysis of Active Figure Control Effects on Mounting Strategy for X-Ray Optics

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As part of ongoing development efforts at MSFC, we have begun to investigate mounting strategies for highly nested x-ray optics in both full-shell and segmented configurations. The analytical infrastructure for this effort also lends itself to investigation of active strategies. We expect that a consequence of active figure control on relatively thin substrates is that errors are propagated to the edges, where they might affect the effective precision of the mounting points. Based upon modeling, we describe parametrically, the conditions under which active mounts are preferred over fixed ones, and the effect of active figure corrections on the required number, locations, and kinematic characteristics of mounting points.

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