FULLY REFLECTIVE 2-AXIS SCAN-DESIGN FOR A STATIONARY BEAM IN THE OBJECTIVE-PUPIL

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ABSTRACT:

X-Y Scanners are an essential part of every point-scanning-imaging technique. In general, scan-systems need to find the right balance between permissible x/y scan-range, beam-diameter, chromatic errors and beam-displacement in the back-focal plane of the objective. Existing approaches use multiple galvanometer-scanners per scan-axis, chromatic relay optics between scanners or multiple spherical mirrors to overcome these limitations.

Our approach uses a single scanner per scan-axis, is fully achromatic, affords large scan-angles as well as large beam diameters and yields a diffraction limited performance while being absolutely stationary in the back focal plane of the objective.

Our poster will display the optical principle of the design, which is currently being prepared for patenting, its numerical evaluation, as well as results of a first experimental verification.