

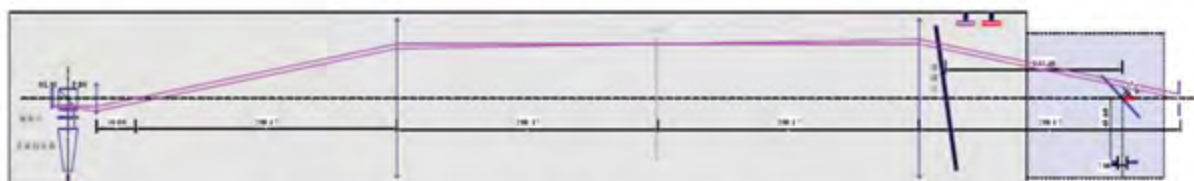


Dynamic Simulator

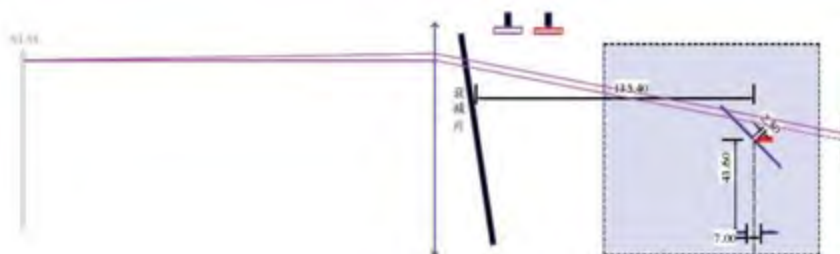
Our FSLM-HD70-A/P amplitude-and-phase spatial light modulator can be used for dynamic vision-sensitive imaging research. In the target image generation algorithm, an aberration calibration method is proposed to reduce the error caused by the optical system by using a higher-order polynomial to establish the mapping relationship from the spatial light modulator to the vision sensor.

Experimental principle

The small-diameter laser emitted by the semiconductor laser passes through the beam homogenizer to form a uniformly expanded light source with a certain divergence angle. After the laser is selected by the polarizer, the S wave is incident on the polarization beam splitter prism (PBS) and reflected by its hypotenuse, and then uniformly irradiated on the SLM. The polarization state of the reflected laser can be changed by the electrical excitation of the SLM. , when passing through the PBS again, only the Pwave component is transmitted out to achieve the purpose of adjusting the light intensity.



Optical system structure diagram of dynamic simulator



Docking optical path



(a) 960nm 图像

(b) 1064nm 图像

(c) 差分图像

Rendezvous and docking acquisition of images

Application direction

A dynamic simulator is designed to provide an optical excitation source for a visual position- attitude measurement sensitive, which can simulate the optical state of a visual target between 120 m and 0.9 m relative to the visual sensitive, based on the actual situation of a closed-loop simulation system for visual position-attitude measurement. The discussed closed-loop excitation source system for the dynamic visual sensor, together with the visual sensor and the dynamics computer, constitutes a closed-loop system that can be used to provide a semi-physical simulation environment for visual navigation guidance systems.