



Contribution ID: 244 Contribution code: WEP23

Type: **Poster Presentation**

## Development of high stability mirror systems at HALF

*Wednesday 17 September 2025 17:00 (1 hour)*

Hefei Advanced Light Source (HALF) is a diffraction-limited light source in the soft X-ray range. It provides a powerful tool for nano-focusing, ultra-high spectral-resolution power experiments and applications. To fully utilize the source characteristics, beamline mirrors and manipulators require high accuracy and stability. In phase I, 10 beamlines will be built, requiring dozens of mirrors with different shapes, sizes, and working conditions to achieve high-fidelity transmission, collimation and focusing, which can be divided into three categories: The first mirror of each beamline, with fixed-shape that needs water cooling, due to absorb high heat load and deflect the beam; The fixed-shape mirror without water cooling for beam transmission, focusing and collimation; The bendable mirrors for KB focusing systems. In this paper, the manipulator for each kind of mirror with high stability is proposed. A universal mirror system with a three-point support structure is developed to hold different manipulators and provide fine-tuning for Height, Roll, and Yaw. Prototype design and preliminary test results are also presented.

### Footnotes

### Funding Agency

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**Session Classification:** Wednesday Poster Session

**Track Classification:** BEAMLINES: Optics