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SPIDER –a Scanning Platform for Imaging and Diffraction with Extreme Resolution

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Experiments with Nano-meter resolution, as planned at PETRA IV, require highly stable experimental conditions. Here, the relative position of sample and optics in the experiment and the highest degree of positional stability are of crucial importance. However, this requires extensive study of interactions between Nano-focusing optics, dynamic scanners, and precise position detection. Aim of the SPIDER project is to develop a modular setup that meets the high stability requirements of the experiments at PETRA IV and can be used either in the laboratory for performance tests or in synchrotron experiments at PETRA. According to the project specifications, we have designed the platform based on several main modules. These can be flexibly combined with other modules in various configurations. The structure of these main modules was also largely realized modular in order to be flexible and sustainable. This contribution, introduce the general concept of SPIDER and describe the design of the SPIDER platform and the individual modules in detail. We will also present some of the initial results from studies that have been carried out recently.

Footnotes

Funding Agency

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