

X-ray active mirror coupled with a Hartmann wavefront analyser

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This paper reports on the design and performances of a test prototype active x-ray mirror which has been designed and manufactured in collaboration with the French SME mechanical company ISP System for the national French storage ring SOLEIL (see figure 1). Coupled with this active x-ray mirror and also in collaboration with a French SME (Imagine Optic) a lot of efforts have been done in order to design and fabricate a wavefront x-ray analyser based on the Hartmann principle (see figure 2).

During the talk I will present the main results obtained with these two devices. I will also present some results on a developed tool for simulation of coherent wavefront propagation on X-ray optical components and wavefront phase recovery from 2D intensity distributions.

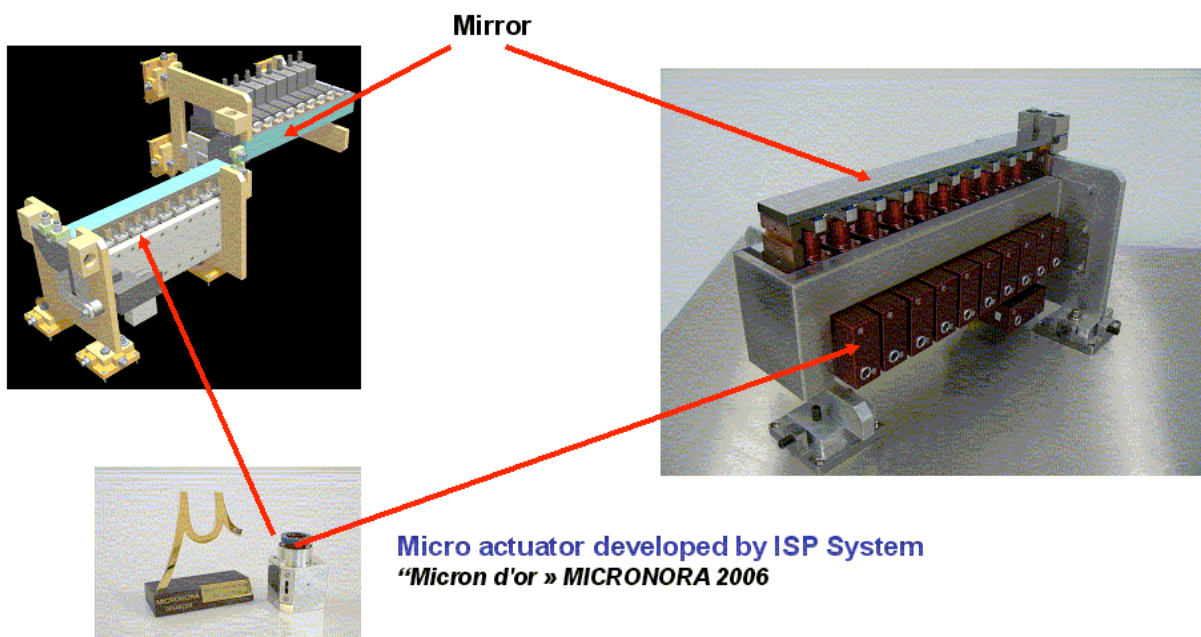
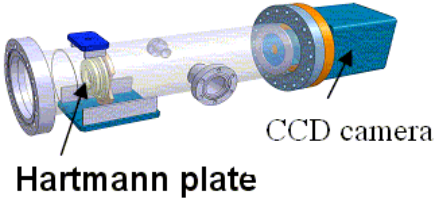


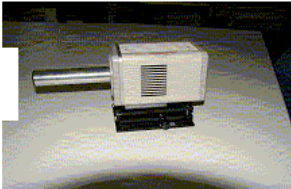
Figure 1 : X-ray active mirror (length 350 mm 14 actuators)

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Wave front analyzer based on the Hartmann principle and Imagine Optic software



**1st prototype
direct detection**



**1st prototype
indirect detection**



Figure : X-ray Hartmann wavefront sensors