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Interferometry measurements at ALBA

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Synchrotron radiation interferometry is used at ALBA to measure the horizontal and vertical beam size (~50 and 20 um). Since the quantity of light is relatively low, a double pinholes system was preferred to the double slit one and, as a consequence the theoretical formula for the fitting process had to be updated. Moreover the diagnostic beamline is almost all "in air"and the light fan suffer for air turbulence and mechanical vibrations. To overcome these inconvenient the exposure time of the CCD has to be set as low as possible. To be sure of the linearity of the CCD at such a low exposure time the device was tested with an "home-made"setup. Finally to achieve an appreciable dynamic range, images are superimposed by a dedicated matching algorithm.

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