WEPCC21 WAVEFRONT DISTORTION MEASUREMENT AT SSRF IBIC qaobo@sinap.ac.cn

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Introduction

Double-silt synchrotron radiation interferometer is a common and useful tool to measure transverse beam size around the world. In order to satisfy the requirement of high speed measurement and improve the accuracy of BSM (beam size monitor), multi-silt interferometers have been designed and tested at SSRF. Multi-silt mask pattern has characteristics of high flux throughput and high SNR of the interferogram, which is very useful at high-speed beam size measurement. This technique has a relative complex algorithm to deconvolve the result image and figure out the beam size. Principle of the multi-silt SR interferometer, mask design and experiment will be present detailed in this paper.

Situation of spatial interferometer at SSRF



Multi-silt interferometer & System setup

Motivation:

- Double-silt synchrotron radiation interferometer is limited at high speed measurement;
- Find a novel method to realize high speed measurement;
- High SNR;
- High intensity;
- Fewer detector points;



Arrangement of 3-silt interferometer at SSRF

3-silt mask silt width:3mm pitch 5mm

COMPARISONS OF 3-silt AND double-silt interferometer



Commissioning and first beam size measurement of 3-silt interference





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