



Contribution ID: 28

Type: poster

Desktop devices for alignment of X-ray double interferometer and generation of dislocations in its block-crystal

Tuesday, 6 June 2023 18:15 (1 minute)

A desktop universal device for X-ray interferometric diagnostics of structural imperfections in single crystals was developed, created and tested. The proposed device can serve both for scratching the surface of the interferometer crystalline blocks and for bending them in order to generate dislocations in the interferometer blocks using our proposed technology.

It has been proved that the moiré topograms obtained from a double X-ray interferometer depend on orientations of reflecting planes relative to the defect. It is shown that multiple interferometers make it possible to simultaneously observe images of various structural imperfections. The experiments make it possible to judge the spatial orientation of defects and the distribution of the stress field caused by defects.

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Session Classification: PS: Poster Session