

# Annotation

## *X-Ray scattering from whispering-gallery mirrors*

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In this paper concave surfaces scanning method based on x-ray whispering gallery effect or more specifically based on total external reflection is considered. In the considered surface scanning method it's proposed to investigate concave mirrors with x-ray beam, which "slides" over the surface due to whispering-gallery phenomenon. This method allows to scan the entire surface and could be applied to surfaces with different sizes, materials and geometries.

The capabilities of this method are studied based on ray-tracing computer simulation of x-ray beam scattering on concave surfaces with and without surface imperfections. The dependence of the output x-ray beam on the statistical surface roughness characteristics and minimum imperfection size estimations that can be detected using the x-ray surface investigation method considered in this paper were obtained.