

**RESEARCH OPPORTUNITIES MANIPULATORS FOR NDT  
NONLINEAR CONTROL SURFACES**

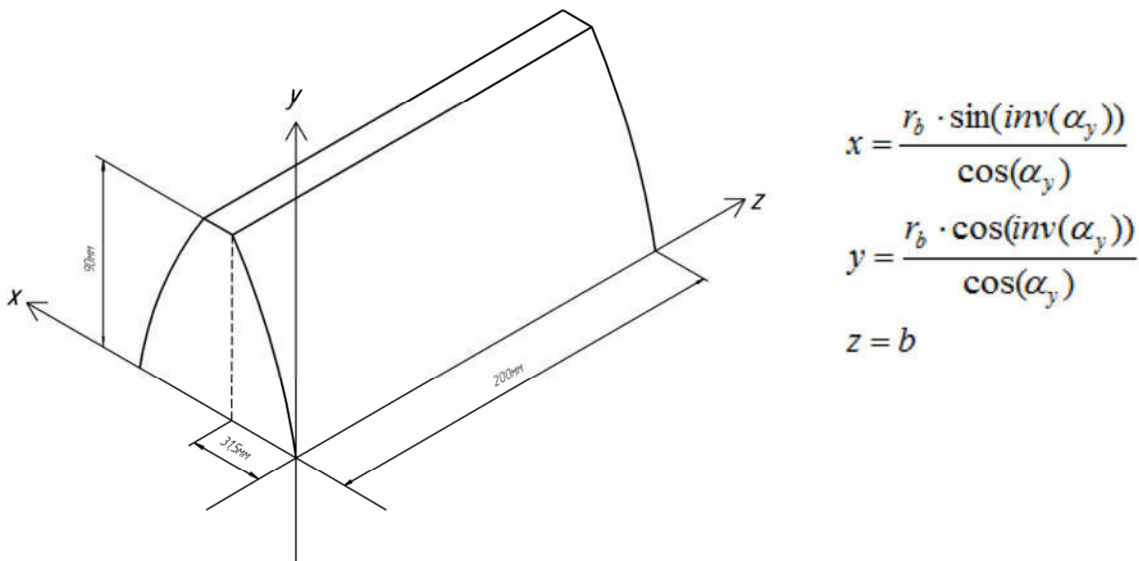
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Automation control and, in particular, the application of non-destructive testing systems programmable manipulators, will lead to a reduction of the subjective errors and improve quality control.

When using manipulators in automated system of NDT, especially as the primary holders of the converter, you must be able to programmatically manage traffic on their links for qualitative recurrence of curvilinear controlled surfaces. The main criterion of the possibilities of this control is to create a mathematical description of curvilinear object controlled surface control.

To obtain the primary results of the controlled object was selected involute gear wheel. In this case, for control of nonlinear surface tooth profile which describes mathematically complex movement must be decomposed into simple components-along axes: X and Y that accurately repeated the shape of evolvent profile of gear wheels, and Z is equal to the width of the wheel.(Fig.1)



**Fig.1. Nonlinear surface tooth profile**

where  $r_b$ -radius of the main wheel circumference and  $\alpha_y$ -angle profile, which is removable. With movement sensor from the prong to its top, the angle will increase.

Opportunities manipulators , albeit limited, but can greatly simplify the process of NDT. Participation to the exclude of the subjective errors and improve the accuracy of the results.

Keywords: non-destructive control, robots-manipulators.