

TOPIC FOR A STUDENT RESEARCH PROJECT OR BACHELOR THESIS

## OPTIMIZATION OF THE EVALUATION AREA ON AREA ROUGHNESS PARAMETERS

Compared to the profile roughness parameter, the area roughness parameter could show more information on the measured surface than the profile roughness parameter. However, the application of area roughness parameters is still under study. There are many influences on the obtained area roughness parameters, such as the evaluation area.

As shown in figure 1, the same grinding surface was measured at different area sizes, and different area roughness parameters were obtained. Remarkably, some parameters deviated significantly. It will be time-consuming if a large area is measured. If a small area is measured, the parameter may not show accurate surface information. Therefore, optimizing the evaluation area is meaningful for area roughness parameters.

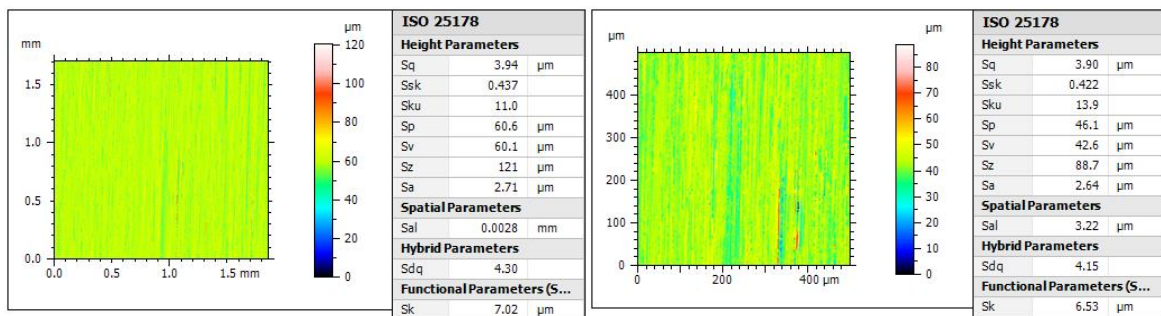


Figure 1: Area roughness parameters from different area sizes at a same grinding surface

This research aims to develop an approach to optimize the evaluation area on the area roughness parameters. Based on this approach, a guideline for practical measurement will be developed.

### TASKS:

- Literature research on the evaluation of area roughness parameter
- Developing and coding the algorithm for the proposed approach (Matlab/Python/...)
- Case study
- Evaluating the results and summarizing the work