Aalto University
School of Engineering

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New probe angles for multi-probe roundness measurement

Title of the dissertation	Multi-Probe Roundness Measurement of Large Rotors
Contents of the dissertation	Multi-probe roundness measurement methods can be used to determine the roundness profile of a rotating workpiece cross-section in conditions where the center point motion of the measured cross section is not repeatable during the rotation. With simulations, the accuracy of different multi-probe roundness measurement in typical conditions was assessed. As the selected probe angles also have an effect on the accuracy of the measurement, the problem of harmonic suppression was analyzed and new optimal probe angles for multi-probe roundness measurement were determined. The results of the research can be applied in technical problems where accurate measurement of the roundness profile is required and it is not possible to support the workpiece to achieve repeatable center point motion, for example in the measurement of paper machine rolls.
Field of the dissertation	Mechanical engineering
Doctoral candidate	Tuomas Tiainen, M.Sc. (Tech.), born in 1992 in Vantaa, Finland
Time of the defence	18 December 2020 at 12:00
Place of the defence	Remote participation with Zoom: https://aalto.zoom.us/j/61972064692
Opponent	Professor Han Haitjema, KU Leuven, Belgium
Supervisor	Assistant professor Raine Viitala, School of Engineering, Aalto University, Finland
Electronic dissertation	https://aaltodoc.aalto.fi/handle/.....
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The dissertation is publicly displayed online 10 days before the defence at
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