Participant report for DIMEG, University of Padova (Italy) Hole Plate No. 132 - DTU Orbit (27/10/2019)

An interlaboratory comparison on mechanical and optical coordinate measuring machines (CMMs) has been organized by the Centre for Geometrical Metrology (CGM), Department of Manufacturing Engineering and Management (IPL), Technical University of Denmark (DTU) and carried out within Collège International pour l’Etude Scientifique des Techniques de Production Mécanique (CIRP). In the project, 15 research laboratories have been involved from 9 countries: Belgium, Denmark, Germany, Italy, Poland, Spain, Switzerland, United Kingdom, USA. A total of 24 CMMs were used to measure an optomechanical hole plate [1], designed and manufactured by DTU. A measurement procedure was sent to each participant together with the hole plate to be measured. The procedure consists mainly of two parts [2]: 1) four reversal measurements, by which the systematic errors in the measuring plane (X,Y) on the CMM are eliminated, except the positioning errors; 2) transfer of traceability by comparator measurement using a length reference chosen by the participant, by which the positioning errors are eliminated. Furthermore, a third optional part could be carried out by the participant, using a different measurement procedure of own choice. In this report, the results of a single participant are analysed and compared with the reference values provided by DTU. The purpose of the report is to collect information from the participant and present the result of the data analysis. Furthermore, comments from the participant are expected by the organizer and the information will be used in the preparation of the final report.

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