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Effects of Surface Variation on CLR Measurement

AUTHORS
Joe Michaud · Dave Ober · Tony Aquino · Tony Slotwinski · Dave Dozor

ORGANIZATION
MetricVision, Inc., Newington, VA

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Abstract: Large volume coordinate measuring system based on coherent laser radar technology provide repeatability to about 3ppm rms. Common to all systems, including structured light and touch-probe metrology, this system exhibits small variations in repeatability/precision depending on the material being measured. The paper shows experimental results on various types of materials (aluminum, steel, carbon fiber composite, glass, plastic, wood, etc). In addition to the experimental data, we discuss optimal setting of the machine parameters for each of these material types, showing how to improve the precision of measurement.