

## Determination of the temperature's influence on the geometry of Coordinate Measuring Arm

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**Keywords:** AACMM, temperature, thermoclimatic chamber, conical head

**Abstract:** An error derived from temperature, influencing an accuracy of the AACMM measurement, can be determined by placing measuring machine in the so-called „temperature cage” (Fig. 1). The cage should be made by placing temperature sensors on the measuring device as well as in its measuring space. The research was carried out in the Laboratory of Techno-Climatic Research and Heavy Machines at the Cracow University of Technology for temperatures such as 10<sup>o</sup>, 15<sup>o</sup>, 20<sup>o</sup>, 25<sup>o</sup> and 30<sup>o</sup>. The temperature's influence was considered by determining geometrical parameters of the device and the change of their length during the temperature's rise. The next step was to perform an interpolation (1d with third degree polynomials) by defining cubic spline between readings [1,2].



**Fig. 1.**  
7-axes AACMM placed in the so-called „temperature cage“

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