Advanced Compensation of Thermal Errors

Machine tool thermal deformations represent one of the major sources of machining inaccuracy and may contribute to total workpiece errors by up to 75%. Reliable software compensations of thermal errors is an effective tool to increasing the machining accuracy.

RCMT has developed an advanced software compensation method for minimization of machine tool thermal errors, based on transfer functions.

Main benefits of this method compared to common approaches include:

- Up to 10× higher machine tool accuracy in a wide range of working conditions
- High robustness and stability
- Simplicity – clear positioning of temperature sensors close to heat sources
- A cheap method with no further requirements on hardware
- Transferability to machine tools from the same production series

Number of successful applications has proven the priority of the RCMT solution compared to standard approaches based e.g. on linear regression models.