
Hydrojet-based parameter control method for aerospace manufacturing processes

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The article presents a newly developed hydrojet-based method for controlling manufacturing process parameters. Fluid jets (for instance, those of cutting fluid) directed towards the gauged workpiece form a so-called liquid optical fiber. The workpiece surface reflects the optical radiation that propagates along the jet towards the workpiece and back. We determine fundamental relations between various parameters, such as optical, hydrodynamic, metrological and others, for different operation modes of the hydrojet-based manufacturing process parameter control method during in-process workpiece dimension gauging.

Keywords: jet, liquid optical fiber, bidirectional optical flow transmission, hydrojet-based control method

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