

# **Efficient parallel algorithm for calculating the transformation matrix of the robot gripper**

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**Abstract:** In this article the model of the multiprocessing system which allows to significantly speed up the implementation of modular algorithms for solving of direct and reverse tasks of dynamics of the industrial manipulation robot is considered. A method for the implementation of these algorithms on the established structure of the processor with shared memory is offered. Development of specialized multiprocessor field used to accelerate calculations. Produced simulation of the hardware-software complex for the problems of dynamics and estimations of an overall performance of parallel algorithm are received.

**Keywords:** industrial robot, kinematics of manipulator, dynamics of manipulator, parallel computing, the model of a synchronous network of processors.