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**REDUNDANT PARALLEL ROBOTS and their CONTROL**

Development of new robot constructions closely relates with the design of new approaches to their control. One of the topical trends in the robot development is a study of certain promising parallel structures of the robots – manipulators and consecutively the design of their control, in redundant case, control of over-actuated or drive-redundant systems. The robot redundancy means the the robot movable platform is supported by more links than necessary. It is advantage because: if a certain group of links is in a position that leads to a kinematic singularity, then another group of links can be used among many available combinations that is not in a singular position.

As an auspicious approach for control of such robots is a model-based approach using mechanical model i.e. model based on kinematics and dynamics of the robot structure and its drives. It pursues global design of control actions corresponding with actual requirement to robot movement - optimizes energy consumption. The important issue is a choice and arrangement of suitable model for given control method. Since the robot is a mechanical body, the classical equations of motion and their suitable modification can be used. The approach provides cooperation of all drives in parallel structure even in redundant case.

#### **The literature**

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