

— TAO par syntaxeur parallele



In remote control, the master element which the user operates looks for practical and historical reasons like the slave arm and therefore features a series architecture, with a few drawbacks in terms of mass, dimensions, rigidity and mechanical complexity. To remedy these defects, we are now introducing a new master element with parallel kinematics. This syntactor, derived from Steward's manipulators, has six degrees of freedom and comprises six motor-driven links arranged on a fixed plate (the base) and a moving plate on which a 6-axis force transducer and a handle are mounted. The device is made artificially free along a few or all axes by means of a hybrid position/force control software which translates the wrench of forces applied by the operator on the handle into displacement for the syntactor, as well as for the slave arm. The operator can thus control the syntactor and the slave arm on free moves, or forced moves, such as drilling, cutting. When the slave is also equipped with a 6-axis force transducer in its terminal part, the operational wrench of forces is then sent to the master in order to implement a two-direction remote control system with known modes, such as weight suppression, homothetic forces.

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