

ABSTRACT

ELEVATOR ACTIVE GUIDANCE SYSTEM HAVING
MODEL-BASED MULTI-INPUT MULTI-OUTPUT CONTROLLER

In an elevator active guidance system, in order to avoid the action of one actuator (23) from interfering with the action of another, a controller (21) is provided that uses a force law based on a model of the elevator (40), and uses information from all of the sensors (22) in combination to determine, according to the force law, the force each actuator (23) should provide. The model of the elevator (40) is used to determine how the elevator (40) will respond to the forces exerted by the actuators (23). In the preferred embodiment, the elevator (40) is assumed to respond to the actuator forces as a rigid body. The full model is built up from this basic assumption, finally including all of the geometric and inertial attributes of the elevator necessary to describe its rigid body motion in response to forces from actuators (23).

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