ACTIVE CONTROL FOR STABILIZING A SERVO-CONTROLLED ACTUATOR SYSTEM

ABSTRACT

An active control mechanism and method for stabilizing a servo-controlled actuator system (10) such as an actuator system in a data recording disk drive by compensating the vibrational modes of the actuator's arm assembly (12). The control mechanism has a sensing arrangement which can include one or more individual sensors (32,34) attached to the actuator at locations where they generate signals in phase with the vibrational modes, and especially with all the major vibrational modes, of the arm assembly (12). A control mechanism derives from the signals an adjustment signal (60) consisting of three corrective terms--a stiffening correction (54), an active damping correction (56), and an inertia reduction correction (58)--and the adjustment signal (60) is used in the feedback control loop to stabilize the actuator system(10).

Fig.3