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(57) Abstract :
METHOD AND SYSTEM FOR UTILIZING NONLINEAR FRICTION DYNAMICS FOR MULTI-MODAL ADAPTIVE VIBRATION ATTENUATION ABSTRACT The disclosed invention presents a method and system for multi-modal adaptive vibration attenuation utilizing nonlinear friction dynamics. The method involves sensing vibrations from a vibrating system through one or more sensors (108), followed by analysis to identify multiple vibration modes using a processor (104). The identified modes inform the determination of an adaptive frictional force, which is subsequently applied by an actuator (110) to the vibrating system for effective attenuation. The system (100) integrates these components seamlessly, with sensors (108) capturing vibrations, a processor (104) analyzing and determining adaptive frictional forces, and an actuator (110) executing the application of these forces. This comprehensive solution provides a versatile and efficient approach to mitigate vibrations across multiple modes, enhancing adaptability in various applications.

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