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Aircraft Landing Gear Fluid Level and Landing Energy Monitoring System

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Hard landing events and improper hydraulic fluid level within the landing gear shock strut have historically caused failures and aircraft mishaps and have been highlighted with recent aircraft incidents. This paper describes a structural health monitoring (SHM) system that will detect both hard landings and improper fluid level made possible by recent technical advances in programmable, digital, Commercial Off The Shelf (COTS) data recorders utilizing very simple, precise, active pressure measurements. The proposed system will alert maintainers/operators to a potentially dangerous aircraft condition that can be addressed before leading to component failure and aircraft mishap. Recent field-testing of operational landing gear struts has revealed that the pressure measurements are sufficiently accurate to determine when a landing gear shock strut is improperly serviced to the correct hydraulic fluid level.

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Ключевые слова:

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Fluid level monitoring and hard landing indication system

Structural health monitoring system features

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