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### **Testing Fundamental Physics with Clocks in Space: The ACES Mission**

Atomic clocks and high-performance links are used to measure time and frequency to accuracy levels never reached before. When operated in a space-based laboratory, the large variations of the gravitational potential, the large velocities and velocity variations, as well as the worldwide access to ground clocks become key ingredients to measure tiny deformations in space-time that might bring the signature of new physics and new fundamental constituents. From the International Space Station, the ACES payload will distribute a clock signal with fractional frequency stability and accuracy of  $1 \cdot 10^{-16}$ . The comparison of distant clocks via ACES will be used to test Einstein's theory of general relativity. The ACES mission elements are now close to flight maturity. The flight model of the cold cesium clock PHARAO has been tested and delivered for integration in the ACES payload. Tests on the active hydrogen maser SHM and the microwave link MWL have been completed and manufacturing of the flight models is ongoing. The time transfer optical link ELT is also well advanced. This paper presents the progress of the ACES mission elements.