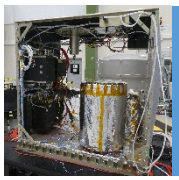

ACES Workshop 2022

École Normale Supérieure
20-21 October
Rue d'Ulm - Paris

Atomic Clock Ensemble in Space (ACES) is developing high performance clocks and links for space to test Einstein's theory of general relativity. From the International Space Station (ISS), the ACES payload will distribute a clock signal with fractional frequency instability and inaccuracy of $1x10^{-16}$, thus establishing a global network to compare atomic clocks in space and on ground.

In the fundamental physics domain, ACES will provide a measurement of Einstein's gravitational redshift, it will search for time variations of fundamental constants, and contribute to dark matter searches. Moreover, it will measure geopotential differences between the ground clocks connected through ACES, it will perform time transfer and clock synchronization experiments, and contribute to the study of atmospheric propagation delays.

The ACES program has recently suffered from major delays due to the difficulties encountered in the development and test of the active hydrogen maser and the time transfer microwave system. The COVID pandemic has not helped either. The constant support from the worldwide scientific community, National Space Agencies, and ESA has now brought new momentum and resources into the ACES program. The new schedule foresees ACES to be ready for launch to the ISS in 2025.

With the revival of the project, we are also resuming the annual ACES workshops. The colloquium will bring together the scientific community to:

- Present the progress of ACES in all domains, from the instruments status to the data analysis and the mission scientific performance;
- Present the progress of atomic clocks and clock-based experiments for general relativity tests, time & frequency metrology, and geodesy applications;
- Encourage international collaborations between research institutes for the exploitation of ACES;
- Discuss recent results from space-based experiments as well as new ideas and proposals on fundamental physics e*xplorers* in space.

The workshop will be held at the **École Normale Supérieure, 29 rue d'Ulm – Paris, on 20-21 October**. It will consist of invited and contributed talks. We warmly encourage all participants to submit abstracts.

ACES Workshop website: https://aces2022.sciencesconf.org/