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Invited Talk
(Invited Talk)
The French national centre for space research (CNES) has performed a concept study of a future mission consisting of a constellation of small GNSS radio occultation (GNSS-RO) receivers on Low Earth Orbit.

The main objective of this mission is to significantly increase the number of GNSS-RO measurements available in near real time. In addition to the currently available satellite constellations and future planned programs, 10,000 additional daily occultations should be provided by 2025.
The goal is to reach the need for 16,000 daily soundings expressed by end users, against the current availability of 3,000 occultations, a number that tends to continously decrease. Such significant increase is expected to improve the skill of numerical weather prediction models and to provide more accurate climatic trends and space weather data.

The requirements of these three scientific communities have been expressed in terms of accuracy, resolution and data latency.
Then, several options have been proposed regarding the technical specifications in order to reach the objective of 10,000 occultations while remaining a low cost mission. The study particularly focused on the size of the constellation (number and altitude of the satellites), the orbital plane of the receivers, the ground station network, the characteristics of the receiver and the antennas as well as the structure and size of the satellites.

The presentation will highlight the main objectives of this innovative mission and introduce a number of technical specifications together with the payload of the CubeSat constellation.
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