



Call for papers

Space work contributions to water challenges.

Towards an integrated approach bringing together space technologies, drones and in-situ measurements for the management of natural resources and environment

(WTC Marseille, June 8 afternoon to June 10, 2020)

The quantitative and qualitative sustainable management of natural resources, water in particular, and the mastery of global change are at the heart of national, European and international challenges. The 17 Sustainable Development Goals (SDGs) for 2030 adopted by the countries of the UN, then the signing in 2016 of the Paris Agreement, reflect international awareness of the effects of climate change and the need for both limit greenhouse gas emissions to curb this phenomenon and also, immediately adapt territories, cities and human practices to these changes. To tackle this challenge, the collection of data on the evolution of environmental parameters is essential at different territorial scales, both on the oceans and on the continents and over long periods of recording in order to establish trends. It is the basis for the implementation of new operational tools and services dedicated, for example, to the monitoring of coastal erosion and changes in the coastline due to the rise in sea level, the monitoring of snow-covered surfaces and glaciers, monitoring of the quantity and quality of water, the aid to river navigation. In parallel, data from remote sensing and data acquired from space, in particular using drones, have made enormous progress in recent years and complement ground measurements with different levels of precision, spatial integration, frequency, ease and cost of acquiring the data sets.

This symposium organized jointly by the Société Hydrotechnique de France (SHF) and the National Center for Space Studies (CNES), with the support of the Investments for the Future Program (PIA), constitutes the second edition on "the contribution of space technology to water challenges ". The event proposes to take stock of the new services based on these observation and measurement systems in the field of water, and their complementarity, both for issues on the national territory and internationally.

The symposium will address four topics:

Topic 1: The water cycle and quantitative water resource management

The first session will focus on quantitative water resource management. How do we determine the status of water resources? How can we improve management of extremes, particularly during high and low water stages? Variables such as precipitation, snowpack, water levels and flow rates and water expanses need to be quantified and monitored. Existing and new satellites open up new ways to address these challenges. New services have been developed using these space technologies, as well as drones and other aerial vehicles.

Topic 2: Coastal water and shoreline management

Coastal areas are exposed to extreme anthropogenic, meteorological and climatic pressures. These sensitive areas must be closely monitored, particularly in this era of climate change. Their alteration can affect the economy, the tourism industry, biodiversity, human activities and land use. Shorelines are now monitored by drones and Earth observation systems, which also provide access to bathymetric data, sediment flow and water levels. In this session, we will discuss existing and future strategies for addressing these challenges.

Topic 3: Water quality and biodiversity preservation

Water quality is a key concern for society. It is essential for food safety and to ensure an adequate supply of drinking water for mankind, as well as for the protection of biodiversity and ecosystems. Yet continuous monitoring of the quality of water expands on a global scale presents a major problem. In this area, access to other sources of field data is now available and new services can be proposed.

Topic 4: Advantages of multi-source information sharing

It is essential to share all sources of hydrological data (whether collected *in situ*, in the field, or by drones, other aerial vehicles or satellites), together with their interpretation and integration into tools, so as to derive the most from such data and to use them to develop new services and applications. Moreover, to address climate change and pressure on water resources, it is critical to raise social awareness of these problems and to promote active citizen involvement in making the necessary adjustments. This session will focus on data sharing platforms, means of communication and citizen participation.

Organizing committee

CNES: Alice ANDRAL, Philippe MAISONGRANDE

SHF: Carole PAPLOREY, Michel LANG, Neda SHEIBANI, Mia ROZENBAUM

ARTELIA: Catherine FREISSINET, Patrick SAUVAGET

MORE INFORMATION

Deadline for paper submission: 28 February 2020

Template and submission on the SHF website :

<http://www.shf-hydro.org/248-1-la-teledetection-et-les-donnees-aeriennes-au-service-de-l-eau-16.html>

Contact : spatial@shf-hydro.org