

INTERNATIONAL MOUNTAIN CONFERENCE

#IMC22

SEPTEMBER 11 - 15 2022

## >> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

## Submitted Abstract

ID IMC22-FSAbstr- 890

First Author First Name	Ana (1)
Last Name	Mellado
Submitting Author First Name Last Name	Ana Mellado
Correspondence	pec.ecomountains@lifewatch.eu
<b>Co-Authors</b> >> E-Mails will be not listed	Ros Candeira, Andrea (2); Merino Ceballos, Manuel (2); Guerrero Alonso, Pablo David (1); Moreno Llorca, Ricardo (2); Zamora, Regino (2,3)
Organisations	1: LifeWatch-ERIC, Spain 2: Andalusian Institute for Earth System Research IISTA-CEAMA, Spain 3: Department of Ecology, University of Granada, Spain
Country	Spain
Region	Western Europe
Title	Smart Ecomountains: The Lifewatch-Eric Thematic Center On Mountain Ecosystems.
Keywords	Mountain Observatories, E-Science, Natural Laboratories, Global Change, Coprehensive Monitoring
Туре	List Of Focus Session
Focus Session ID	26

imc2022@uibk.ac.at +43 512 507 54442



INTERNATIONAL MOUNTAIN CONFERENCE

**#IMC22** 

SEPTEMBER 11 - 15 2022

>> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

Abstract

Mountain researchers have historically approached the study of the physical setting, climate, aquatic and terrestrial ecosystems, and socioeconomic systems in isolated ways. However, to understand the complex interactions and feedbacks of real-world mountain socio-ecological systems it is necessary to adopt a "system thinking", combining interdisciplinary perspectives and integrated observation and analysis. In Smart EcoMountains-the LifeWatch-ERIC Thematic Center on Mountain Ecosystems (Sierra Nevada, Spain) – we are bringing together knowledge from different areas of scientific and technological expertise to develop robust monitoring approaches, as well as advanced technological tools and services to improve our potential for adequately observe, monitor, analyze, report, and predict changes in complex mountain socio-ecological systems and their interactions. Our final goal is to create a permanent physical and virtual research infrastructure that combines new technological tools (remote sensing, IA, Virtual Research Environments, deployment of latest-generation sensors) and traditional field monitoring, to enable the incorporation of all existing sources of information (biophysical, climatic, and socioeconomic) for their analysis and interpretation within a global scientific interdisciplinary context.

Here, we will present the systemic approach adopted in this high-altitude mountain laboratory, with special emphasis on the different methodological approaches used for data collection in mountain systems with extreme climatic conditions and difficult access, including in-situ observational sampling, automated instruments, remote sensing surveys, citizen observations, and e-science. We will also present the different technological tools that we are developing to improve data collection and analysis, as well as to enhance knowledge dissemination and reporting capacity, in order to share our experience with the global mountain research community and explore collaboration opportunities.

Research Area Mountain Regions Innrain 52f 6020 Innsbruck Austria WWW.IMC2022.INFO

imc2022@uibk.ac.at +43 512 507 54442