RPAS for studying Mountain environments: lessons from the Chilean GOAIR

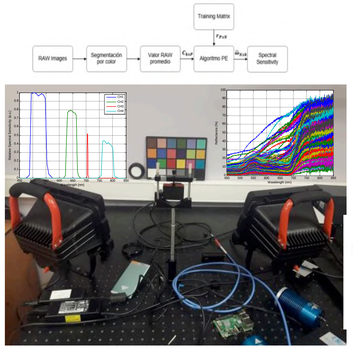
Alfonso Fernández[1,2,3], Frank Tinapp[3,4,5], Alan Pinos[1,2], Andreaw Rifo[1,2], Nico Sánchez[3,4,5], José Cifuentes[3,6], Luis Arias[3,6], Oscar Cifuentes[2,3], Ianire Galilea[2,3], Edilia Jaque[2,3]

[1]Mountain Geoscience Group, Universidad de Concepción, Chile ;[2]Department of Geography, Universidad de Concepción, Chile; [3]GOAIR, Universidad de Concepción, Chile; [4]Department of Mechanical Engineering, Universidad de Concepción, Chile; [5]Aerospace Technology Lab, Universidad de Concepción, Chile; [6]Department of Electrical Engineering, Universidad de Concepción, Chile

MOTIVATION

Remotely Piloted Aerial Systems (RPAS) are becoming a standard tool for the Geosciences. With the increasing availability of diverse platforms, from fixed wing to multirotors, RPAS equipped with sensors are able to deliver near-real time data at very high spatial resolution for a number of applications including precision agriculture, land cover classification, and topographic changes, among others. Mountain environments represent a particular challenge for obtaining data from RPAS.

GOAIR-UdeC is a new initiative being developed by researchers at the Universidad de Concepción (UdeC). GOAIR stands for *Grupo de Operaciones, Aplicaciones e Investigación en RPAS* and its goal is to develop research and applications of RPAS for the Geoscience community in Chile. In the last few years we have gathered experience in building, customizing and operating RPAS in different locations, notably mountain environments.



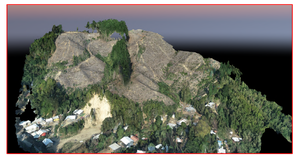
Transforming drones' multispectral cameras into hyperspectral

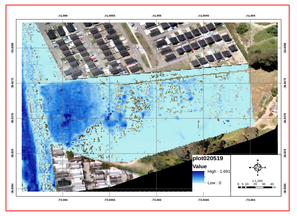
UAVs designed and assembled at Universidad de Concepción's GOAIR are allowing monitoring of Chilean mountain environments at unprecedented detail, supporting new analysis and modeling of natural hazards, changes in glaciers

More info? Contact part of our group? →

Contact: alfernandez@udec.cl (Alfonso Fernández)

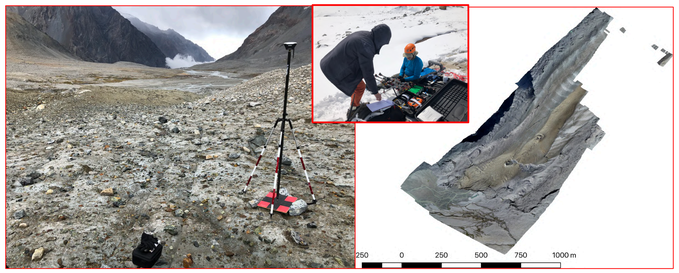
Mountain GeoScience Group
www.mgsg.udec.cl



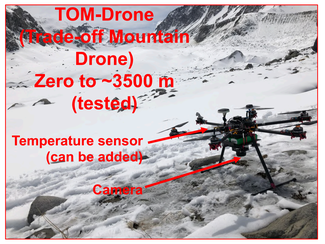


Photogrammetric mapping in the Chilean Coastal Range: DEMs for flooding and landslide mapping in quasi real-time. Supporting soil mapping and characterization

Photogrammetric mapping on snow and ice surfaces to calculate height changes and roughness



SOME OF OUR PLATFORMS



FUTURE?
We're looking for interested colleagues in order to work cooperatively to

- Test new sensors.
- Develop new applications.
- Tackle scientific questions as a network.
- Write proposals together.

ID17I10087
FONDEF
Fondo de Fomento al Desarrollo Científico y Tecnológico

11160454
Fondecyt
Fondo Nacional de Desarrollo Científico y Tecnológico