

Ingeniería 



Agencia  
Nacional de  
Investigación  
y Desarrollo

# **Platform for standardization, characterization and calibration of environmental air and water diagnoses**

Proyecto a presentar a Fondecup 2020

Ingeniería 

# The rise of cost-effective sensors

“While there are some trade-offs with regards to robustness, calibration requirements and accuracy of low cost sensors when compared to high-end commercial sensors (Castell et al., 2017), the potential for greatly increased spatial coverage will facilitate new insights into environmental process dynamics (Krause et al., 2015).”

Mao et al., 2019



## Environment

Water quality and water dynamics monitoring.

Air quality and pollution exposure monitoring

Remote sensing applied to climate change phenomena

## Agro

Remote water availability and quality monitoring

Smart precision farming

Early warning systems

## Industry

Environmental regulations

Community engagement and transparency

Operations

# Platform

## Mimic environmental variables

Environmental chambers

Simulation water flow system

## Reference instrumentation (physico-chemical analysis)

Air (PM, O<sub>3</sub>, NO, VOC, CO, NO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>)

Water (pH, DO, temp, electroconductivity, flux, level, turbidity, nutrients, others)

## In-situ calibration system

Mobile unit for context-based calibration

Water/Air sampler

Atmospheric station  
(Wind, temp, moisture, UV, precipitation)

# Collaborations

## Nationals



Universidad Austral de Chile  
Campus Patagonia



Universidad  
de Concepción



## Internationals



UNIVERSITY OF  
LEICESTER



UNIVERSITY of WISCONSIN  
GREEN BAY



THE UNIVERSITY  
OF QUEENSLAND  
AUSTRALIA

# Impact

- Science and tech development in environmental areas (fostering the integration of Data Science and Sustainability)
- Increase I+D projects
- Unique and reference group in Chile and in the region
- Leadership in environmental sensing standards
- Increase research with impact indicators (tech transfer)
- Support and increase national and international environmental, agricultural and climate change research.
- Easy implementation (new building IngenieriaUDD)
- Links Academia-Government and Academia- Industry.  
Reference center and research contracts.